THE DANISH INGOLF-EXPEDITION

VOLUME III

13

CRUSTACEA MALACOSTRACA VIII (AMPHIPODA IV)

BY

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WITH 38 FIGURES AND 10 CHARTS IN THE TEXT

COPENHAGEN

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Contents.

(* indicates that the species is new to the area.)

Introduction.

The present fourth (and last) part of the Amphipoda of the Ingolf-Expedition is written after another scheme than that of the three first parts (vol. 3, nos. 8, 9 and 11, 1923–31). These three first parts, comprising the Hyperiidea and the Gammaridea up to and including the fam. Calliopiidæ (the families are listed in the same order as in Stebbing, Amphipoda Gammaridea, Tierreich, vol. 21, 1906) were written according to the primary plan, the aim of which was that the report should be a fauna of the area of the Ingolf-Expedition, and thus comprise all the species found in the seas round the Faroes, Iceland, and Greenland.

Later on, however, the issue of special faunas of the Faroes, Iceland and East Greenland was started (a fauna of West Greenland has not been planned as yet), and these faunas comprise all species from depths down to about 300–400 m. If all these, mainly littoral and sublittoral, species should be included in the Ingolf-report the result would be a needless repetition of numerous species and localities[1]).

Therefore it was decided that the present paper should comprise only species found at depths > 400 m, and it includes the remaining part of the Gammaridea + Ingolfiellidea and Caprellidea, altogether 80 species. The majority are found only at depths > 400 m.

No less than 32 species are new to the area[2]), 11 even new to science; they are as follows:

No. 303. *Eusirus abyssi* n. sp.
- 319. *Rhachotropis faeroensis* n. sp.
- 323. *Melita abyssorum* n. sp.
- 330. *Eurystheus abyssalis* n. sp.
- 331. *Bathyphotis tridentata* n. gen. n. sp.
- 336. *Ischyrocerus hanseni* n. sp.
- 353. *Dulichia abyssi* n. sp.
- 354. — *spinosa* n. sp.
- 356. *Protellina ingolfi* n. gen. n. sp.
- 357. *Parvipalpina verrucosa* n. gen. n. sp.
- 358. *Thorina spinosa* n. gen. n. sp.

Abbreviations in the explanation of the figures.

A.1–2: antennæ 1–2.
ac.fl.: accessory flagellum of antenna 1.
C: cephalon, head.
E.1–3: epimeral plates *1–3* of the metasome segments.
L.: anterior lip, upper lip.
l.: posterior lip, lower lip.
M., Mts.: metasome.
Md.: mandible.
Mx.1–2: maxillæ 1–2.
Mxp.: maxilliped.
P.1–7: pereiopods 1–7.
p.: palp.
T.: telson.
U.: urosome.
Up.1–3: uropods 1–3.
Us.1–3: urosome segments 1–3.

II Tribe: Gammaridea.

Family: Calliopiidæ G. O. Sars.

Appendix.

271. Halirages quadridentatus. G. O. Sars.

Halirages quadridentatus K. Stephensen, "Ingolf"-Exped., vol. 3, part 11, 1931, p. 268, p. 271.

Additional localities:

67°57′ N, 6°44′ W, 2386 m, ÷ 1°1. "Ingolf" St. 112.
2 ♂ about 38–45 mm, very defective. The determination is not certain, for second joint in pereiopod 7 has lower hind corner rounded.
70°05′ N, 8°26′ W, 699 m, ÷ 0°4. "Ingolf" St. 116: 23-VII-1896.
1 specimen about 24 mm.
69° 13′ N, 8°23′ W, 1889 m, ÷ 1°0. "Ingolf" St. 117: 24-VII-1896.
3 specimens up to about 30 mm.
68°27′ N, 8°20′ W, 1996 m, ÷ 1°0. "Ingolf" St. 118: 24-VII-1896.
4 specimens up to 35 mm.
64°40′ N, 15°40′ W, 932 m, ÷ 0°6. "Ingolf" St. 124: 28-VII-1896.
2 specimens up to about 30 mm.

272. Halirages elegans (Norman?) Stappers.

Halirages elegans K. Stephensen, "Ingolf"-Exped., vol. 3, part 11, 1931, p. 268, 272.

Additional locality:

64°07′ N, 11°12′ W, 446 m, 2°5. "Ingolf" St. 4: 13-V-1895. 2 specimens about 25 mm.

[1]) 79 species belonging to these families and not included in the present Ingolf-report are known from the area from depths of 0–400 m: 43 out of these are found at the Faroes, 70 at Iceland, 53 at East Greenland and 61 at West Greenland.

[2]) See Contents, the species marked with an asterisk *.

Family: Pleustidæ Stebbing.

Paramphithoidæ G. O. Sars. Crust. of Norway, vol. 1, 1895, p. 343.
Pleustidæ Stebbing. Tierreich, vol. 21, 1906, p. 309.
Pleustida Chevreux & Fage, Faune de France, vol. 9, 1925, p. 184.

Genus: Pleustes Spence Bate.

286. Pleustes panoplus (Krøyer).

Pleustes panoplus G. O. Sars, l. c. 1895, p. 344, pl. 121.
Pleustes panoplus Stebbing, l. c. 1906, p. 310.

Occurrence:
64°07′ N, 11°12′ W, 446 m, 2°5. "Ingolf" St. 4: 13-V-1895. 1 specimen.
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895. 1 small specimen.

These depths are extraordinarily great; usually the species lives in the littoral and sublittoral zones.

Distribution. Probably a panarctic(-boreal) species; for further details see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 253, and my paper on the Amphipods of East Greenland, soon going into the press.

Genus: Parapleustes Buchholz.

287. Parapleustes pulchellus (Krøyer).

Paramphithoë exacantha G. O. Sars, Norske Nordhavs-Exp., vol. 6, Crust., 1885, p. 168, pl. 14 fig. 3.
Paramphithoë pulchellus G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 346, pl. 122 fig. 1.
Neopleustes pulchellus Stebbing, Tierreich, vol. 21, 1906, p. 312.

Occurrence:
65°14′ N, 55°42′ W, 791 m, 3°5. "Ingolf" St. 28: 1-VII-1895. 1 specimen.
65°14′ N, 30°39′ W, 1416 m, 2°1. "Ingolf" St. 95: 27-VI-1896. 3 specimens.
65°24′ N, 29°00′ W, 1384 m, 1°2. "Ingolf" St. 96: 28-VI-1896. 1 specimen.
66°16′ N, 26°08′ W, 600 m, ÷ 0°1. Capt. Wandel leg. 1889. 1 specimen.

The last-named specimen is the form *exacanthus* G. O. Sars 1885; the specimens from the three "Ingolf"-Stations belong to the form *pulchellus* G. O. Sars 1895.

These depths are extraordinarily great; the usual depths seem to be 150–300 m.

Distribution. An arctic-boreal species, distributed from Kara Sea and Arctic America to the Skagerrak; for further details see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 255.

Genus: Stenopleustes G. O. Sars.

288. Stenopleustes nodifer (G. O. Sars).

Stenopleustes nodifer G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 356, pl. 125 fig. 2.
Stenopleustes nodifer Stebbing, Tierreich, vol. 21, 1906, p. 316.
Stenopleustes nodifer Chevreux & Fage, Faune de France, vol. 9, 1925, p. 187, figs.

Occurrence:
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895. 3 specimens.
65°14′ N, 30°39′ W, 1416 m, 2°1. "Ingolf" St. 95: 27-VI-1896. 1 specimen.

Two of the specimens from St. 44 have nodi also on 6th mesosome segment, so that there are in all 4 (not 3) pairs of nodi.

The depths are extraordinarily great (see below).

Distribution. From the Trondheimfjord to the Faroes and NW. France, 60–285 m; Connecticut. For further details see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 259.

289. Stenopleustes malmgreni (Boeck).

Stenopleustes malmgreni G. O. Sars, Crust. of Norway, vol. 1. 1895, p. 355, pl. 125 fig. 1.
Stenopleustes malmgreni Stebbing, Tierreich, vol. 21. 1906, p. 316.

Occurrence:
65°14′ N, 30°39′ W, 1416 m, 2°1. "Ingolf" St. 95: 27-VI-1896. 1 specimen.

This specimen was not dissected, but it seems to agree well with Sars l. c. and it has the very large eyes characteristic of the genus.

Distribution. Norway from Oslofjord to about 70° N, 150–350 m (K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 259). S. and SW. of Iceland, 143–326 m (K. Stephensen, Zool. of Iceland, vol. 3, no. 26, 1940, p. 45).

Genus: Sympleustes Stebbing.

290. Sympleustes latipes (M. Sars).

Parapleustes latipes G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 360, pl. 127.
Sympleustes latipes Stebbing, Tierreich, vol. 21, 1906, p. 317.
Sympleustes latipes Chevreux & Fage, Faune de France, vol. 9, 1925, p. 189, fig.

Occurrence:
63°04′ N, 9°22′ W, 493 m, 5°3. "Ingolf" St. 2: 12-V-1895. 1 specimen.
65°14′ N, 55°42′ W, 791 m, 3°5. "Ingolf" St. 28: 1-VII-1895. 2 specimens.
65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. 1 specimen.
62°00′ N, 21°36′ W, 1591 m, 3°3. "Ingolf" St. 40: 9-VIII-1895. 1 specimen.
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895. 3 specimens.
65°24′ N, 29°00′ W, 1384 m, 1°2. "Ingolf" St. 96: 28-VI-1896. 1 specimen.
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. About 10 specimens.
70°32′ N, 8°10′ W, about 900 m, clay. H. Deichman leg. 27-VI-1891. 3 specimens.

Distribution. Widely distributed from W. Greenland and northeastern U. S. A. to Murman Coast and Açores; depths from 60–1600 m. For special localities, see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 260, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 45.

291. Sympleustes dentatus Chevreux.

Sympleustes dentatus Chevreux, Amphip.; in: Expéd. sci. Travailleur et Talisman, 1927, p. 91, pl. 7 figs. 13–26.

Occurrence:
64°54′ N. 55°10′ W, 740 m, 3°8. "Ingolf" St. 27: 1-VII-1895. 1 specimen.

The specimen is rather defective, it has lost urosome; length 7.5 mm. As far as could be ascertained without dissection, it agrees excellently with CHEVREUX's specimen (ovigerous ♀), except

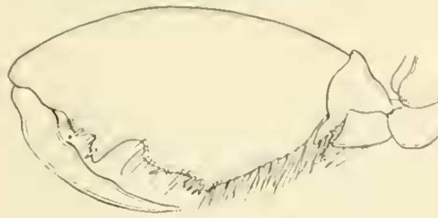

Fig. 1. *Sympleustes megacheir* ♂, pereiopod 2. "Ingolf" St. 11.

that the hand of pereiopod 2 is somewhat broader in the "Ingolf"-specimen. No marsupial plates could be found.

Distribution. Near the Canaries 28°33′ N, 15°39′ W. 946 m, sand etc., 1 ♀ (type-locality; CHEVREUX l. c.).

292. **Sympleustes megacheir** (Walker 1897) (Fig. 1). (= ? **S. grandimanus** (Chevreux 1887)).

Parapleustes megacheir Walker, Jour. Linn. Soc., vol. 26, 1897, p. 230, pl. 18 fig. 4 (4 specimens (all ♂?), up to 8 mm).
Sympleustes megacheir Stebbing, Tierreich, vol. 21, 1906, p. 317.
Sympleustes megacheir Chevreux, Amphip.; in: Expéd. sci. Travailleur et Talisman, 1927, p. 88, pl. 7 figs. 6–12 (1 ♂ 6.5 mm, 1 ovigerous ♀ 8.5 mm).
Sympleustes megacheir Chevreux, Rés. Camp. Sci. Monaco, vol. 90, 1935, p. 101 ("un exemplaire"), pl. 1 fig. 15 (col. fig.).
Probably synonymous with:
Amphithopsis grandimana Chevreux, Bull. Soc. Zool. France, vol. 12, 1887, p. 570 (1 ♀, 7.5 mm).
Dautzenbergia grandimana Chevreux. Rés. Camp. Sci. Monaco, vol. 16, 1900, p. 73, pl. 10 fig. 1, a–k (1 ♀ 7.5 mm).
Dautzenbergia grandimana Stebbing, Tierreich, vol. 21, 1906, p. 728.
Sympleustes grandimana Stebbing, ibid. p. 318.
Sympleustes grandimana Sexton, Proc. Zool. Soc. London, 1910, p. 857, pl. 80 figs. 8–32 (5 ♀ 3–7.5 mm).
Sympleustes grandimanus Chevreux, Amphip.; in: Expéd. sci. Travailleur et Talisman, 1927, p. 86, pl. 7 figs. 1–5 (1 ♀ 8 mm).
Sympleustes (*Dautzenbergia*) *grandimana* Barnard, Amphip.; John Murray Exped., vol. 4, no. 6, 1937, p. 158 (1 immature ♀ 6.5 mm).

Occurrence:
64°34′ N, 31°12′ W, 2418 m, 1°6. "Ingolf" St. 11: 21-V-1895. 2 ♂ about 11–12 mm, on a finely ramose Gorgonid.

Remarks. It is not quite clear if *S. grandimanus* (Chevreux 1887) and *S. megacheir* (Walker 1897) are synonymous or not. Of *S. grandimanus* only ♀♀ are described; of *S. megacheir* ♂♂ are described, + a single ovigerous ♀ (Chevreux 1927).

The "Ingolf"-specimens are ♂♂ which are much larger (11–12 mm) than the largest specimens hitherto described (8–8.5 mm). They agree fairly well with ♂♂ of *S. megacheir*, as described and drawn by WALKER l. c. and CHEVREUX 1927. Pereiopod 1 (= gnathopod 1) has the finger finely denticulate as recorded by CHEVREUX 1927 for *S. megacheir* (this character is not mentioned in WALKER's original description 1897). Pereiopod 2 (= gnathopod 2) differs however from WALKER l. c. fig. 4 b and CHEVREUX 1927 fig. 9 in having the proximal process on the palm triangular and much more projecting than in the figures cited; this difference is possibly due to the difference in size of the specimens. Telson is apically notched to about $^1/_3$ of the length and agrees with WALKER's fig. 4 c; CHEVREUX 1927 fig. 12 shows the notch much shorter.

Distribution. 48°7½′ N, 8°13′ W, depth? (SEXTON l. c., and Jour. Mar. Biol. Assoc. Unit. Kingdom, vol. 9, 1911, p. 209). 43°12′50″–43°12′15″ N, 11°53′30″–11°52′ W, 363–510 m (*S. grandimana*, type-locality; CHEVREUX 1887 and 1900). SW. of Ireland, about 1400 m (*S. megacheir*, type-locality; WALKER 1897). 38°16′35″ N, 28°17′20″ W, 1022 m (*S. megacheir*; CHEVREUX 1935). 29°03′ N, 14°48′ W, 1220 m, and 29°01′ N, 11°51′ W, 1180 m (*S. megacheir*; CHEVREUX 1927). 21°53′ N, 0°19′50″ W, 655 m (*S. grandimana*; CHEVREUX 1927). – Indian Ocean: South Arabian Coast, St. 54: 21°50′ N, 59°52′ E, 1046 m (*S. grandimana*; BARNARD 1937).

293. **Sympleustes pulchellus** (G. O. Sars).

Parapleustes pulchellus G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 359, pl. 126 fig. 2.
Sympleustes pulchellus Stebbing, Tierreich, vol. 21, 1906, p. 319.

Occurrence:
63°13′ N, 15°14′ W, 1130 m, 4°5. "Ingolf" St. 7: 17-V-1895. 1 specimen.
61°30′ N, 22°30′ W, 1886 m, 3°0. "Ingolf" St. 67: 3-VI-1896. 1 specimen.
66°18′ N, 25°59′ W, 621 m, ÷ 0°75. "Ingolf" St. 15: 4-VI-1895. 2 specimens.
63°06′ N, 56°00′ W, 2258 m, 2°4. "Ingolf" St. 24: 25-VI-1895. About 15 specimens.
65°14′ N, 55°42′ W, 791 m, 3°5. "Ingolf" St. 28: 1-VII-1895. 2 specimens.

Distribution. From Greenland to Novaja Zemlya, with the deep Polar Basin, depths 30–>1000 m; for special localities see K. STEPHENSEN, Tromso Mus. Skr., vol. 3, 1935–42, p. 263.

Family: Paramphithoidæ Stebbing.

Epimeridæ G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 362.
Paramphithoidæ Stebbing, Tierreich, vol. 21, 1906, p. 320.
Paramphithoidæ Chevreux & Fage, Faune de France, vol. 9, 1925, p. 190.

Genus: Epimeria Costa.

294. **Epimeria parasitica** (M. Sars).

Epimeria parasitica G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 366, pl. 129 fig. 1.
Epimeria parasitica Stebbing, Tierreich, vol. 21, 1906, p. 321.

Occurrence:
61°07′ N, 9°35′ W, 835 m. "Thor" St. 78: 12-V-1904. Numerous specimens.

Distribution. Northern Norway and western Norway, deep water; Bay of Biscay 411 m (K. STEPHENSEN, Tromso Mus. Skr., vol. 3, 1935–42, p. 264).

295. **Epimeria loricata** G. O. Sars.

Epimeria loricata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 368, pl. 129 fig. 3.
Epimeria loricata Stebbing, Tierreich, vol. 21, 1906, p. 322.

Occurrence:
63°21′ N, 25°21′ W, 320 m, temp.? "Ingolf" St. 85: 17-VI-1896. 1 specimen.
62°58′ N, 7°09′ W, 731 m, ÷ 0°4. "Ingolf" St. 143: 11-VIII-1896. 1 specimen.
66°35′ N, 56°38′ W, 599 m, 3°9. "Ingolf" St. 32: 11-VII-1895. 4 specimens.
65°37′ N, 56°37′ W, 500 m. "Dana" 22-VI-1925, Ad. S. Jensen. 1 specimen.
66°32′ N, 18°50′ W. 480 m. "Dana" St. 3241: 12-VIII-1927. 1 specimen.
66°18.7′ N, 18°36′ W, 360 m. "Dana" St. 5982: 19-VII-1938. Numerous specimens.

Distribution. From Greenland to Spitsbergen, Barents Sea, and Skagerrak; also about 43° N, 51° W, 1100 m; depths 100–1400 m. For special localities see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 265, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 46.

296. **Epimeria cornigera** (I. C. Fabricius).

Epimeria cornigera G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 364, pl. 128.
Epimeria cornigera Stebbing, Tierreich, vol. 21, 1906, p. 323.
Epimeria cornigera Chevreux & Fage, Faune de France, vol. 9, 1925, p. 191, figs.

Occurrence:
61°08′ N, 9°28′ W, 820 m. "Thor" St. 78: 12-V-1904. Numerous specimens.
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 3 specimens.

Distribution. From northern Norway and Iceland to the Mediterranean; also South and East Africa, depths 64–900 m. For special localities see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 266, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 47.

Genus: **Paramphithoë** Bruzelius.

297. **Paramphitoë hystrix** (Ross).

Acanthozone cuspidata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 370, pl. 130.
Paramphithoë hystrix + *P. cuspidata* Stebbing, Tierreich, vol. 21, 1906, p. 325, p. 326.

Occurrence:
65°34′ N, 7°31′ W, 1435 m, ÷ 0°8. "Ingolf" St. 105: 11-VII-1896. 1 specimen.

Distribution. Widely distributed in the arctic seas with adjacent waters, probably circumpolar; depths 10–300(1435) m. For special localities, see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 267.

Family: **Amathillopsidæ** Pirlot.

Amathillopsidæ Pirlot, Siboga-Exped., Amphip., vol. 2 pt. 2, 1934, p. 201, and pt. 3, 1936, p. 238.

According to Pirlot this new family comprises the following three genera, viz., *Amathillopsis* Heller, *Acanthopleustes* Holmes, and *Cleonardopsis* Barnard (= *Amathillopleustes* Pirlot). Two of them are represented in the "Ingolf"-material.

Genus: **Amathillopsis** Heller.

Amathillopsis Stebbing, Tierreich, vol. 21, 1906, p. 384.
Amathillopsis Pirlot, l. c. 1934, p. 201.

298. **Amathillopsis atlantica** Chevreux.

Amathillopsis atlantica Chevreux, Bull. Inst. Océanogr. Monaco, no. 122, 1908, p. 3, fig.
Amathillopsis atlantica Chevreux, Rés. Camp. Sci. Monaco, vol. 90, 1935, p. 113, pl. 1 fig. 20 (col. fig.), pl. 12 fig. 4.

Occurrence:
61°30′ N, 22°30′ W, 1836 m, 3°0. "Ingolf" St. 67: 3-VI-1896. 2 specimens up to about 20 mm.

Distribution. 39°11′ N, 30°24′15″ W, 1600 m; 38°18′ N, 28°14′45″ W, 1692 m; 37°40′ N, 26°26′15″ W, 1919 m (Chevreux l. c.).

299. **Amathillopsis spinigera** Heller (Chart I).

Amathillopsis spinigera G. O. Sars, Crust., Norske Nordhavs-Exp., 1885, p. 181, pl. 15 fig. 2.
Amathillopsis spinigera Stebbing, Tierreich, vol. 21, 1906, p. 384.

Occurrence:
65°00′ N, 11°16′ W, 584 m, ÷ 0°1. "Ingolf" St. 59: 20-V-1896. 1 ♀ about 42 mm.
66°23′ N, 12°15′ W, 1011 m, ÷ 0°7. "Ingolf" St. 101: 10-VII-1896. 2 specimens, including 1 ♀ with marsupium.
66°23′ N, 10°26′ W, 1412 m, ÷ 0°9. "Ingolf" St. 102: 10-VII-1896 1 ♀ with big young.
66°23′ N, 8°52′ W, 1090 m, ÷ 0°6. "Ingolf" St. 103: 10-VII-1896. 1 ♀.
66°23′ N, 7°25′ W, 1802 m, ÷ 1°0. "Ingolf" St. 104: 11-VII-1896. 4 ♀.
65°34′ N, 7°31′ W, 1435 m, ÷ 0°8. "Ingolf" St. 105: 11-VII-1896. 1 ♀.
65°34′ N, 8°54′ W, 842 m, ÷ 0°6. "Ingolf" St. 106: 12-VII-1896. 1 ♀.
65°29′ N, 13°25′ W, 72 m. 1°5. "Ingolf" St. 109: 18-VII-1896. 2 ♀.
66°44′ N, 11°33′ W, 1471 m, ÷ 0°8. "Ingolf" St. 110: 19-VII-1896. 1 ♀ with young.
69°13′ N, 8°23′ W, 1889 m, ÷ 1°0. "Ingolf" St. 117: 24-VII-1896. 5 specimens including 1 ♀ with young, 38 mm.
68°27′ N, 8°20′ W, 1996 m, ÷ 1°0. "Ingolf" St. 119: 25-VII-1896. 2 specimens including 1 ovigerous ♀.
67°29′ N, 11°32′ W, 1666 m, ÷ 1°0. "Ingolf" St. 120: 25-VII-1896. 1 specimen.
67°40′ N, 15°40′ W, 932 m, ÷ 0°6. "Ingolf" St. 124: 28-VII-1896. 5 specimens including 1 ♀ with marsupium 43 mm.
68°08′ N, 16°02′ W, 1373 m, ÷ 0°8. "Ingolf" St. 125: 29-VII-1896. 1 specimen.
63°29′ N, 6°59′ W, 1469 m, ÷ 0°9. "Ingolf" St. 140: 11-VIII-1896. 1 specimen.

Distribution. The deep Polar Basin with adjacent seas, from East Greenland to Franz Joseph Land (type locality) and Kara Sea, depths 66 m (Kara Sea) to 2000 m (Polar Basin), usually at negative temperatures. For special localities see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 299, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 49, with chart p. 79, and my paper on the Amphipods of East Greenland (species no. 111), shortly going into the press.

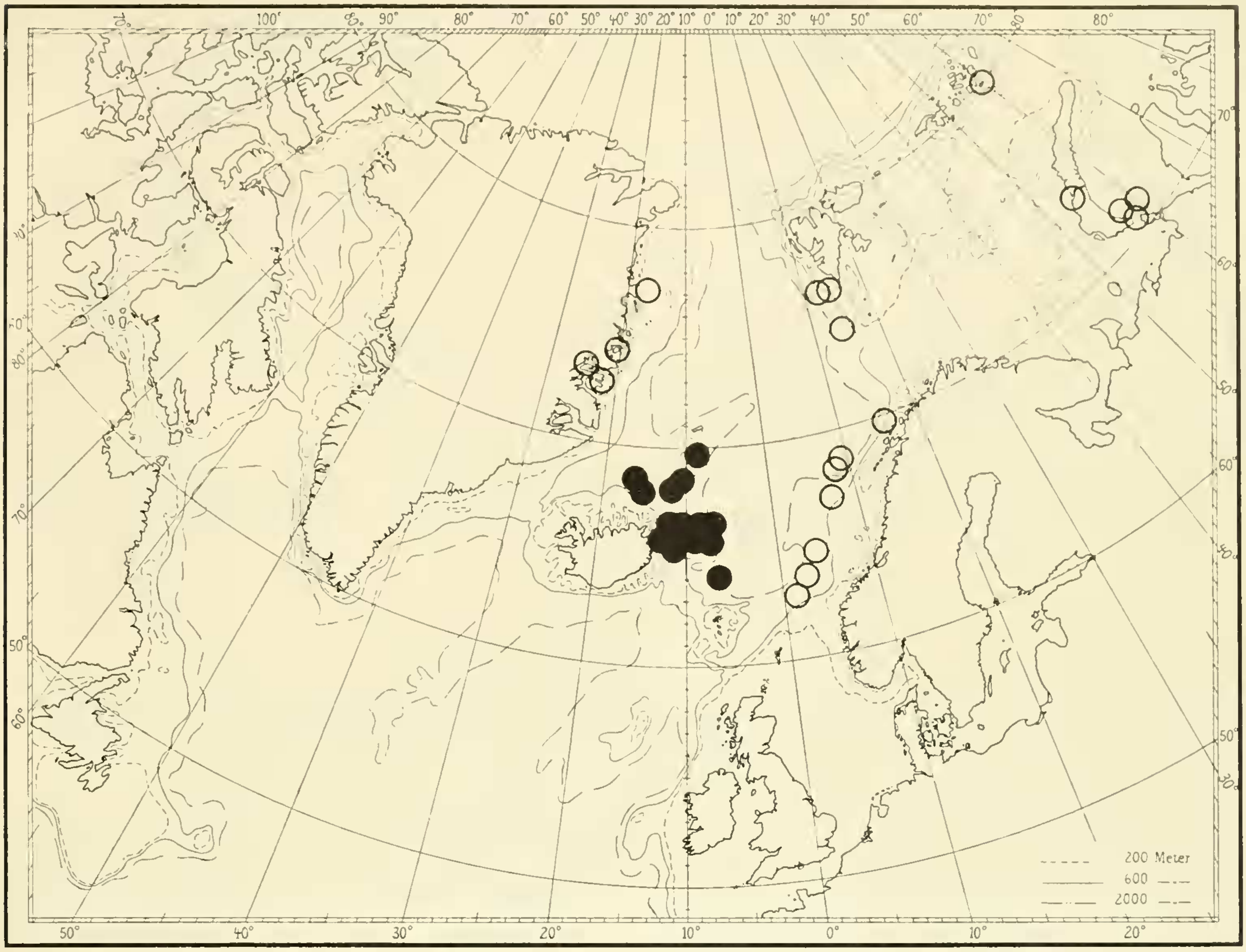

Chart I. Distribution of *Amathillopsis spinigera*. ● = new localities, ○ localities from the literature.

Genus: **Cleonardopsis** Barnard.

Cleonardopsis Barnard, Ann. South Afric. Mus., vol. 15, 1916, p. 175.
Amathillopleustes Pirlot, Siboga-Exped., Monogr. 33 d, 1934, p. 204 (*fide* Pirlot, ibid., Monogr. 33 e, 1936, p. 237).

300. **Cleonardopsis carinata** Barnard.

Cleonardopsis carinata Barnard, l. c. 1916, p. 176, pl. 27 figs. 7–9.
Amathillopleustes alticoxa Pirlot, l. c. 1934, p. 205, figs.
Cleonardopsis carinata Pirlot, l. c. 1936, p. 237 (synonymy, etc.).

Occurrence:
64°54′ N, 55°10′ W, 740 m, 3°8. "Ingolf" St. 27: 1-VII-1896. 1 ovigerous ♀ about 10 mm.
61°07′ N, 9°30′ W, 850 m. "Thor" St. 78: 12-V-1904. 1 specimen (♂?) about 7 mm.
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 6 specimens (all ♂?) up to about 7 mm.

The largest specimen (from "Ingolf" St. 27) was dissected (except the oral parts), and I find no difference from PIRLOT's description and figures.

Distribution. South Africa: Cape Point NE. by E., distant 36 miles, 1200 m (BARNARD l. c.). Moluccas: 2°40′ S, 128°37′5 E, 835 m (PIRLOT l. c. 1934).

Family: **Atylidæ** G. O. Sars.

Atylidæ G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 461.
Atylidæ Stebbing, Tierreich, vol. 21, 1906, p. 327.
Atylidæ Chevreux & Fage, Faune de France, vol. 9, 1925, p. 193.

Genus: **Nototropis** Costa.

301. **Nototropis (smitti** (Goës)?) (Fig. 2).

Paratylus smitti G. O. Sars l. c., p. 468, pl. 165 fig. 1.
Nototropis smitti Stebbing l. c., p. 332.

Occurrence:
61°07′ N, 9°30′ W, 835 m. "Thor" St. 78: 12-V-1904. 1 ♂ juv., about 9 mm.
61°15′ N, 9°35 W, 900 m. "Thor" St. 99: 22-V-1904. 1 ♂(?) about 13 mm.

Remarks. These two specimens are very close to *N. smitti* and should probably be referred to that species. I have compared them with SARS l. c. and with specimens from varying depths

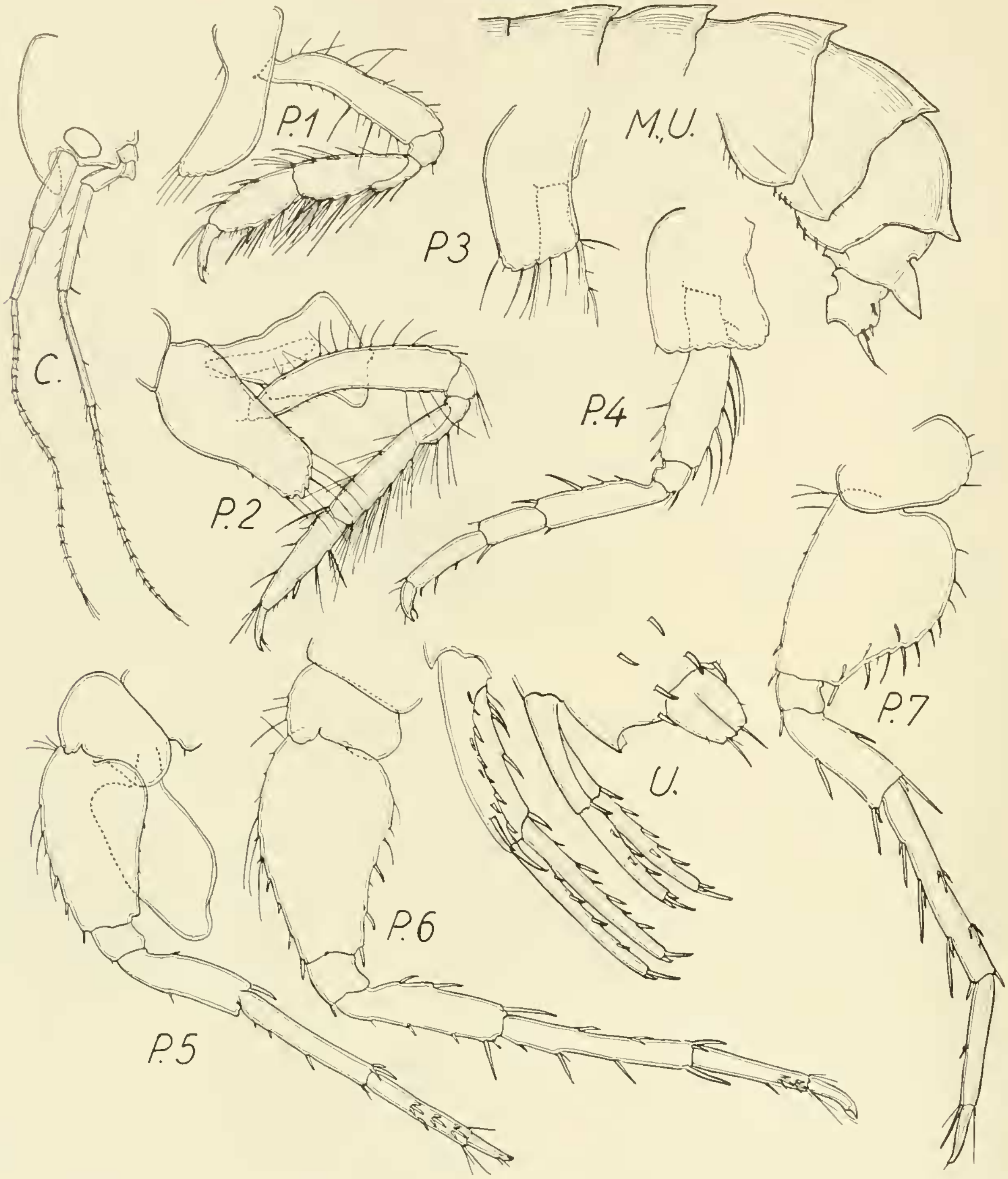

Fig. 2. *Nototropis* (*smitti?*). "Thor" St. 78, 1904.

(down to 200 m) in East Greenland and find the following differences (but I give drawings of all the limbs).

Rostrum more stout and apically more blunt. The lappet under the eyes broader than deep and posteriorly defined by a rectangular notch (as in specimens from East Greenland); in Sars's figure the lappet is deeper than broad and the notch acute-angled. The eyes are colourless, rather large and oblong (as in East Greenland specimens); in Sars's figure they are rounded and smaller. In antennæ 1–2 flagella have rather few joints (about 20 in ant. 1, about 16 in ant. 2); in Sars's drawing and in East Greenland specimens there are many more joints, probably due to the larger length of the specimens. The oral parts were dissected out, but I have found no differences from *N. swammerdami* (M.-Edw.) (see G. O. Sars l. c., p. 463, pl. 163). Pereiopod 2 has sideplate widened in the proximal end (fore and hind edges are not parallel), and metacarpus somewhat narrower than in Sars's fig. and in East Greenland specimens. Pereiopod 5: forelobe of sideplate rounded, not acute, and lower hind corner of second joint rounded rectangular, not acute-angled. Pereiopod 7: hind margin of second joint with a few setæ in upper half, in *N. smitti* densely setose, and with a few spines near lower hind corner. Uropod 3 totally lost.

These disagreements are so small that I dare not erect a new species; but the "Thor"-specimens are taken from much greater depths (835–900 m) than those in which the species usually is found (down to about 250 m).

Distribution. A mainly arctic species, found from Greenland to the New Siberian Islands; for special localities see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 277.

302. **Nototropis nordlandicus** (Boeck) (Fig. 3).

Paratylus nordlandicus G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 469, pl. 165 fig. 2.

Nototropis nordlandicus Stebbing, Tierreich, vol. 21, 1906, p. 332.

Occurrence:

61°07′ N, 9°30′ W, 835 m. "Thor" St. 78: 12-V-1904. About 20 specimens.

61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 3 small specimens.

Remarks on ♂, about 8 mm. Agrees on the whole with Sars l. c., but differs in the following essentials. (I have, however, dissected a specimen from West Norway, determined by Sars, and find that it in all details agrees with the "Thor"-specimens).

Rostrum a trifle more stout and a little shorter, half as long as first joint of antenna 1; ocular lobe ending in a tooth, and lower lobe more protruding than in Sars's figure. Branchiæ distinctly lobular in pereiopods 2–5, but simple in pereiopods 6–7 (Sars l. c. writes: "branchial lamellæ distinctly lobular", but does not say that in the two last pairs of pereiopods they are simple). Pereiopod 2: sideplate has lower hind corner a little more rounded

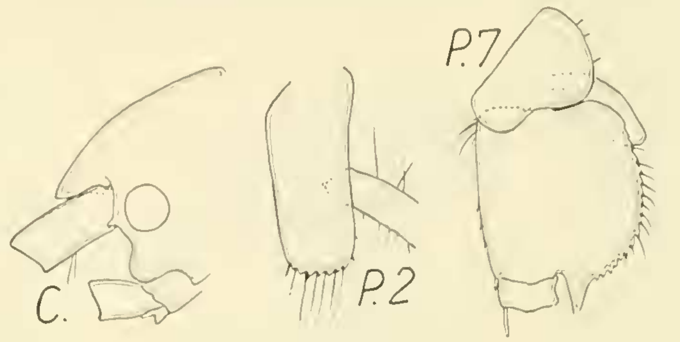

Fig. 3. *Nototropis nordlandicus.*

than in Sars's fig., and the acute projection on lower hind corner of second joint of pereiopod 7 more narrow.

Distribution. From southern Norway to eastern Murman Coast, 30–230 m. For special localities see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 277.

Family: Eusiridæ Stebbing.

Eusiridæ G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 411.

Eusiridæ Stebbing, Tierreich, vol. 21, 1906, p. 338.

Genus: Eusirus Krøyer.

Eusirus G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 415.

Eusirus Stebbing, Tierreich, vol. 21, 1906, p. 338.

Between 1906 (Stebbing l. c.) and 1938 (Zoological Record) the following species were erected.

1. *E. laticarpus* Chevreux, Exp. Antarct. Française, Sci. Nat., Docum. Sci., Paris 1906, p. 49, figs. – Chevreux, 2e Exp. Antarct. . . ., Paris 1913, p. 167.
2. *E. bouvieri* Chevreux, Anal. Mus. Nac. Buenos Aires, ser. 3 a, vol. 14, 1911, p. 405, figs.
3. *E. tjalfiensis* K. Stephensen 1912, se below, p. 11.
4. *E. splendidus* Chilton, Edinburgh Trans. R. Soc., vol. 48, pt. 2, 1912, p. 492, figs.
   Synonymous with
   E. perdentatus Chevreux, l. c. 1913, p. 163, fig. – Schellenberg, D. Südpolar-Exp., Zool., vol. 10, 1926, p. 350. – Barnard, Terra Nova-Exped. (British Antarct. Exped.), Natural Hist. Rep., Zool., vol. 8, no. 4, 1930, p. 387. – Schellenberg, Further Results Swed. Antarct. Exped. 1901–1903 . . . edited by Sixten Bock, vol. 2, no. 6, 1931, p. 173. – Barnard, Discovery Rep., vol. 5, 1932, p. 189, fig. – Nicholls, Austral. Antarct. Exped. 1911–14, ser. C, Zool. and Bot., vol. 2, part 4, 1938, p. 98.
5. *E. microps* Walker, see Barnard, Discovery Rep., vol. 5, 1932, p. 191.
6. *E. parvus* Pirlot, Siboga-Exp., Monogr. 33 d, Leiden 1934, p. 210, figs.
7. *E.* sp. Pirlot, ibid. 1934, p. 212, figs.

303. **Eusirus** (?) **abyssi** n. sp. (Figs. 4–5).

Occurrence:

60°37′ N, 27°52′ W, 1505 m, 4°5. "Ingolf" St. 78: 13-VI-1895. 2 ♀ with large marsupium, length exclusive of telson (which is lost) 15 mm.

Description. The specimens are very defective; telson and distal part of several appendages are lost. The integument is somewhat horny as in *Eusirus*, not papyraceous and thin as in *Eusirogenes*.

Rostrum short. The 3 metasome segments and first urosome segment are carinate, each with a medio-dorsal tooth. Hind margin of third epimeral plate very finely serrate. Telson lost.

Eyes could not be found. Antenna 1, first joint as long as head + first segment, terminating in two dentiform processes; second joint a little shorter and more slender, ending in a single dentiform lappet; third joint very short, with a tongue-shaped lappet; the preserved part of flagellum as long as first joint of peduncle. Accessory flagellum a trifle longer than third joint of peduncle. Antenna 2, ultimate joint of peduncle a little shorter than penultimate joint; the preserved part of flagellum as long as peduncle, with numerous short joints.

Oral parts agree fairly well with those described and drawn by Stebbing (Trans. Linn. Soc. London, ser. 2, vol. 10, 11, 1904, p. 15, pl. 2 A) for *Eusirogenes dolichocarpus*, but differ in the following characters: epistome very high, higher than upper lip; mandibles: third joint in palp about as long as first + second joints (as in *Eusirus*), not shorter (as in *Eusirogenes*); lower lip: nothing noteworthy to remark; maxilla 1: inner plate very narrow, ending in two setæ (Stebbing: "seemingly very slight"); palps: right palp has the two joints of equal length, in left palp second joint is twice as long as first joint (Stebbing: "first joint scarcely half as long as second"); maxilla 2 agrees fairly well with Stebbing l. c.; maxillipeds: outer plates about twice as broad as inner plates (Stebbing: "little broader . . ."); palp: first joint about half as long as second, which is a trifle longer than third joint; fourth joint in length about 3/4 of 3rd joint (Stebbing: "second, third and fourth joints elongate, . . . subequal in length").

Pereiopod 1: side-plate rather similar to *E. propinquus* (G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 417, pl. 147 fig. 1); the following joints of the limb not different from pereiopod 2, but a trifle shorter. Pereiopod 2: side-plate not deeper than broad, with fore corner rounded, and hind corner rectangular; second joint rather long, also fourth joint long; process on fifth joint

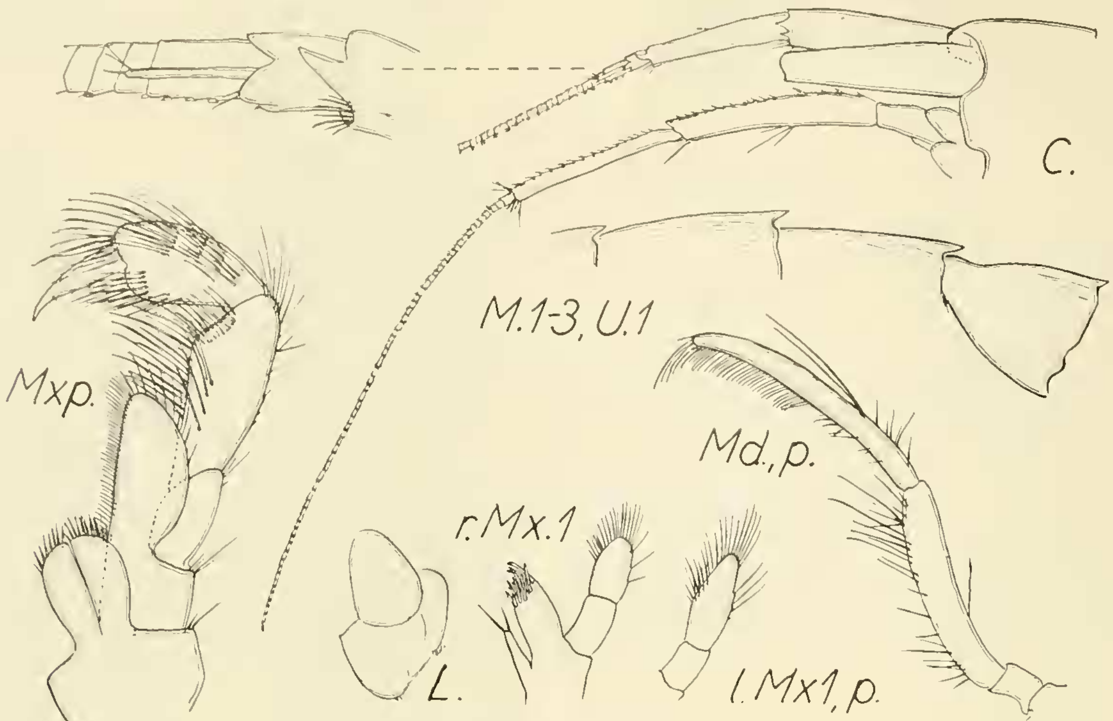

Fig. 4. *Eusirus abyssi*. *r.Mx.1* = maxilla 1 from the right side. *l.Mx.1p.* = palp of maxilla 1 from the left side.

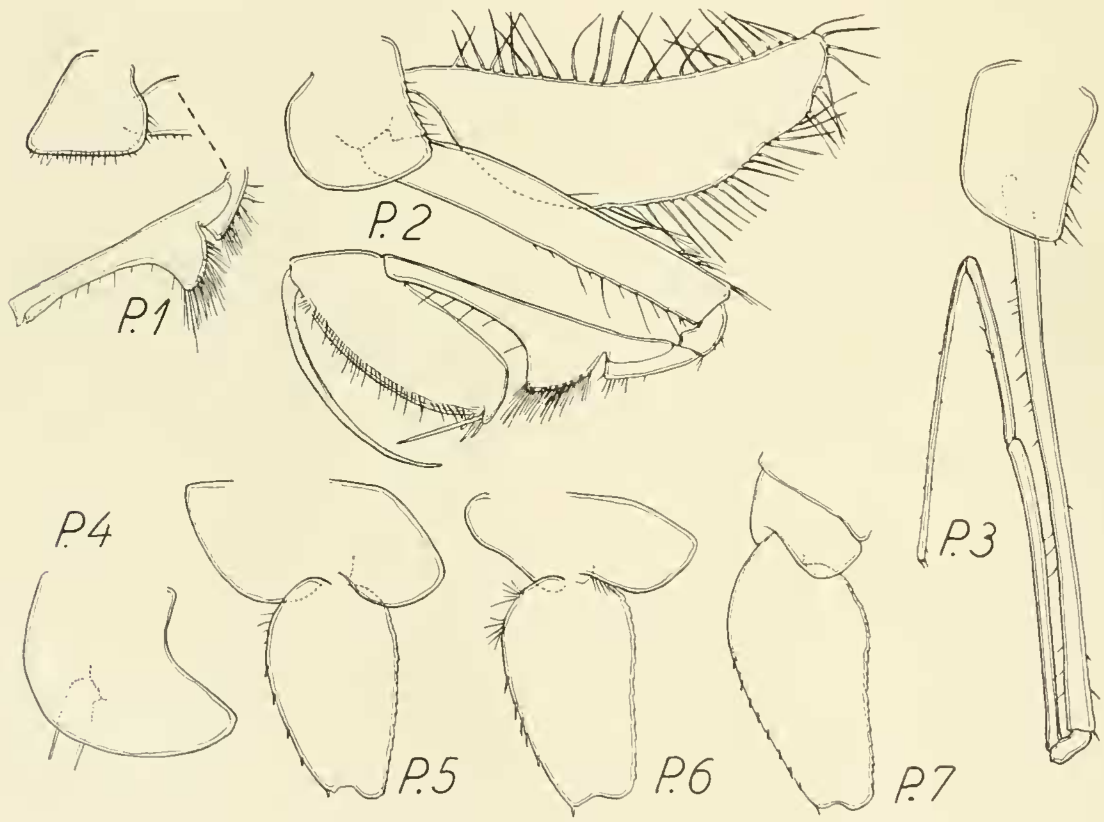

Fig. 5. *Eusirus abyssi*.

(carpus) very broad, broader than high; sixth joint (metacarpus), length about $^2/_5$ of breadth; the obtuse projection armed with 3 short and one very long spine; dactylus slender and curved. Pereiopod 3, side-plate somewhat rhomboid, but deeper than broad and deeper than side-plate 2; second joint very long, but a trifle shorter than fourth + fifth joints combined; 6th joint half as long as second, dactylus lost. Pereiopod 4, side-plate falcate, about as broad as deep. Pereiopods 5–7, second joint of about equal length and breadth, hind margin finely serrate; joints 4–7 lost. Uropod 1 (rather defective) seems to be similar to *Eusirus*; uropods 2–3 and telson lost.

Affinities. This species belongs perhaps to *Eusirus* (head not arching over base of antennæ 1; third joint of mandibular palp as long as first and second joints combined; pereiopod 1

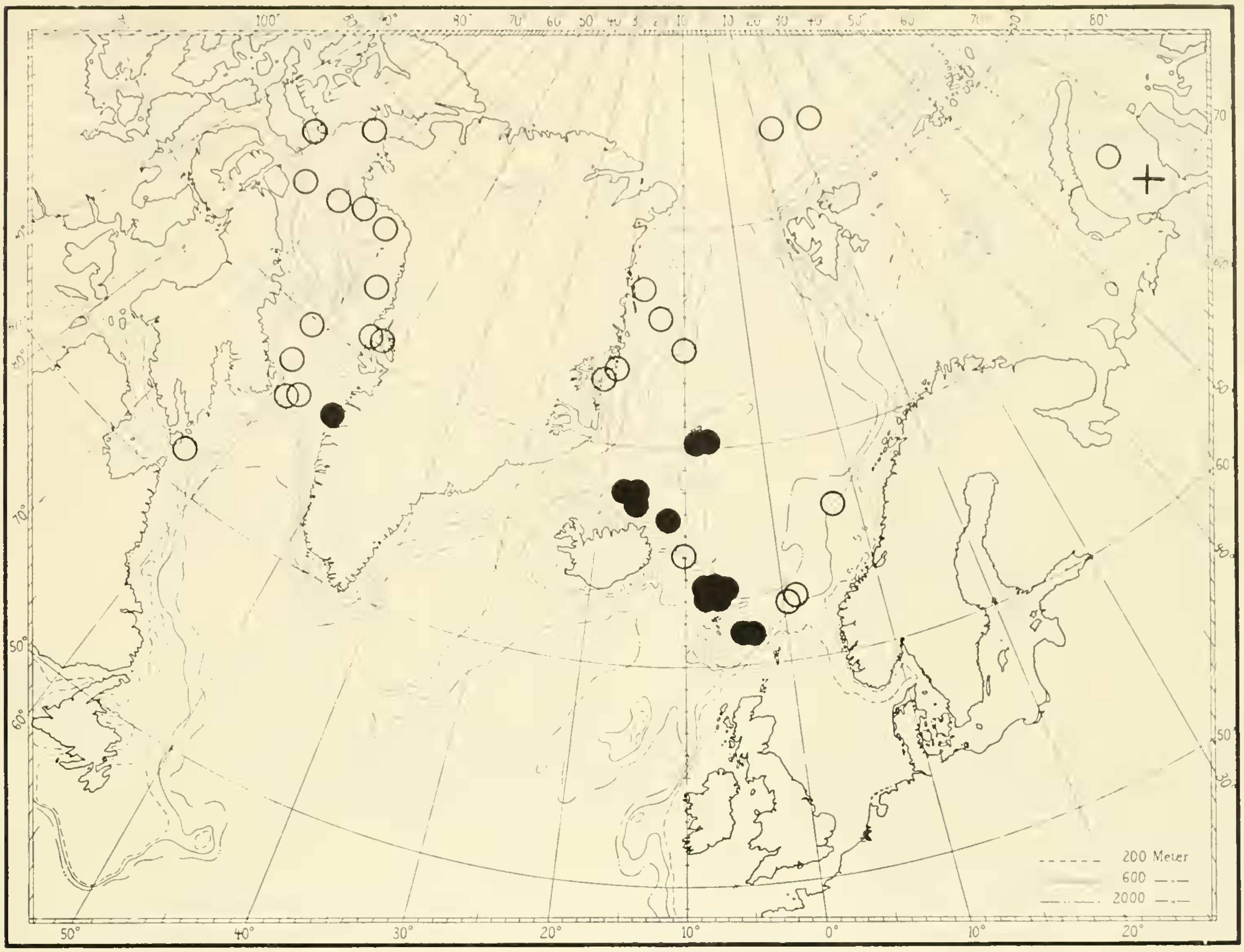

Chart II. Distribution of *Eusirus holmi*. ● = new localities, ○ = localities from the literature. + = the type-locality

not smaller than pereiopod 2), perhaps to *Eusirogenes*[1]) (distal margin of upper lip straight; inner plates of maxillipeds completely separate; shape of process on fifth joint of pereiopods 1–2).

On the whole it seems to be more close to *Eusirus* than to *Eusirogenes*. It differs from all other species of *Eusirus*[2]) in the very broad process on fifth joint of pereiopods 1–2 and in the very narrow 6th joint in the same limbs. The specific name *abyssi* is proposed in allusion to the very great depth (1505 m) in which it was taken.

304. **Eusirus tjalfiensis** K. Stephensen.

Eusirus tjalfiensis K. Stephensen, Vid. Medd. Naturh. Foren. Kjobenhavn, vol. 64, 1912 (1913), p. 94, fig. 5.

Occurrence:
70°41′ N, 52°07′ W, 750 m, 800 m wire out. "Tjalfe" St. 171: 6-VIII-1908.

Not taken outside this locality.

[1]) Genus *Eusirogenes* Stebbing, Trans. Linn. Soc. London, ser. 2, vol. 10, II, 1904, p. 15, with the following 3 species:
1. *E. dolichocarpus* Stebbing (Bay of Biscay, mesoplankton trawl, 2000 to 1000 fathoms); ibid. p. 15, pl. 2 A.
2. *E. propinquus* Scott (59°36′ N, 7°00′ W, 1140 m); Scott, Ann. Mag. Nat. Hist., ser. 8, vol. 4, 1909, p. 31, pl. 2 figs. 1–9.
3. *E. deflexifrons* Shoemaker (Cabot Strait, Gulf of St. Lawrence, 387 m) Shoemaker, Contrib. Canad. Biol., vol. 5, 1930, p. 311, figs.

[2]) List of species, see above p. 9.

305. **Eusirus biscayensis** Bonnier.

Eusirus biscayensis Bonnier, Ann. Univ. Lyon, vol. 26, 1896, p. 651, pl. 39 fig. 1.
Eusirus biscayensis Stebbing, Tierreich, vol. 21, 1906, p. 342.
Eusirus biscayensis Sexton, Proc. Zool. Soc. London, 1909, p. 865, figs.

Occurrence:
61°07′ N, 9°28′ W, 820 m. "Thor" St. 78: 12-V-1904. 3 specimens (1 ♀ with marsupium, 2 ♂?), all rather defective.
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. About 10 specimens (♂, ♀), all rather defective.

In all these specimens uropod 3 is lost.

Distribution. Bay of Biscay 44°36′ N, 4°38′ W, 950 m, mud, 1 ♀ (type-locality; BONNIER). 48°7½′ N, 8°13′ W, about 475 m, fine sand, 1 ♂, 6 ♀ (SEXTON).

306. **Eusirus holmi** H. J. Hansen (Chart II).

Eusirus holmi H. J. Hansen, Dijmphna-Exped., Kjøbenhavn, 1886, p. 224, pl. 22 fig. 1.
Eusirus holmi Stebbing, Tierreich, vol. 21, p. 342.

Occurrence:
66°23′ N, 12°05′ W, 1011 m, ÷ 0°7. "Ingolf" St. 101: 10-VII-1896. 2 specimens, the largest (♂) 51.5 mm.

70°05′ N, 8°26′ W, 699 m, ÷ 0°4. "Ingolf" St. 116: 23-VII-1896. 8 specimens, including 3 smaller and 5 larger specimens, two of which are ovigerous ♀ (length up to 48 mm).
67°40′ N, 15°40′ W, 932 m, ÷ 0°6. "Ingolf" St. 124: 28-VII-1896. 2 specimens: one of them medium-sized, the other (♀ with marsupium) 49 mm.

Amerdlokfjord near Holsteinsborg, West Greenland, 250–450 m, several occurrences, numerous specimens. Poul M. Hansen leg. 1935–1938, Ad. S. Jensen ded.

Distribution. Between Greenland and Arctic America 61°–78° N, 250–> 700 m (see K. Stephensen, Meddel. om Grønl.,

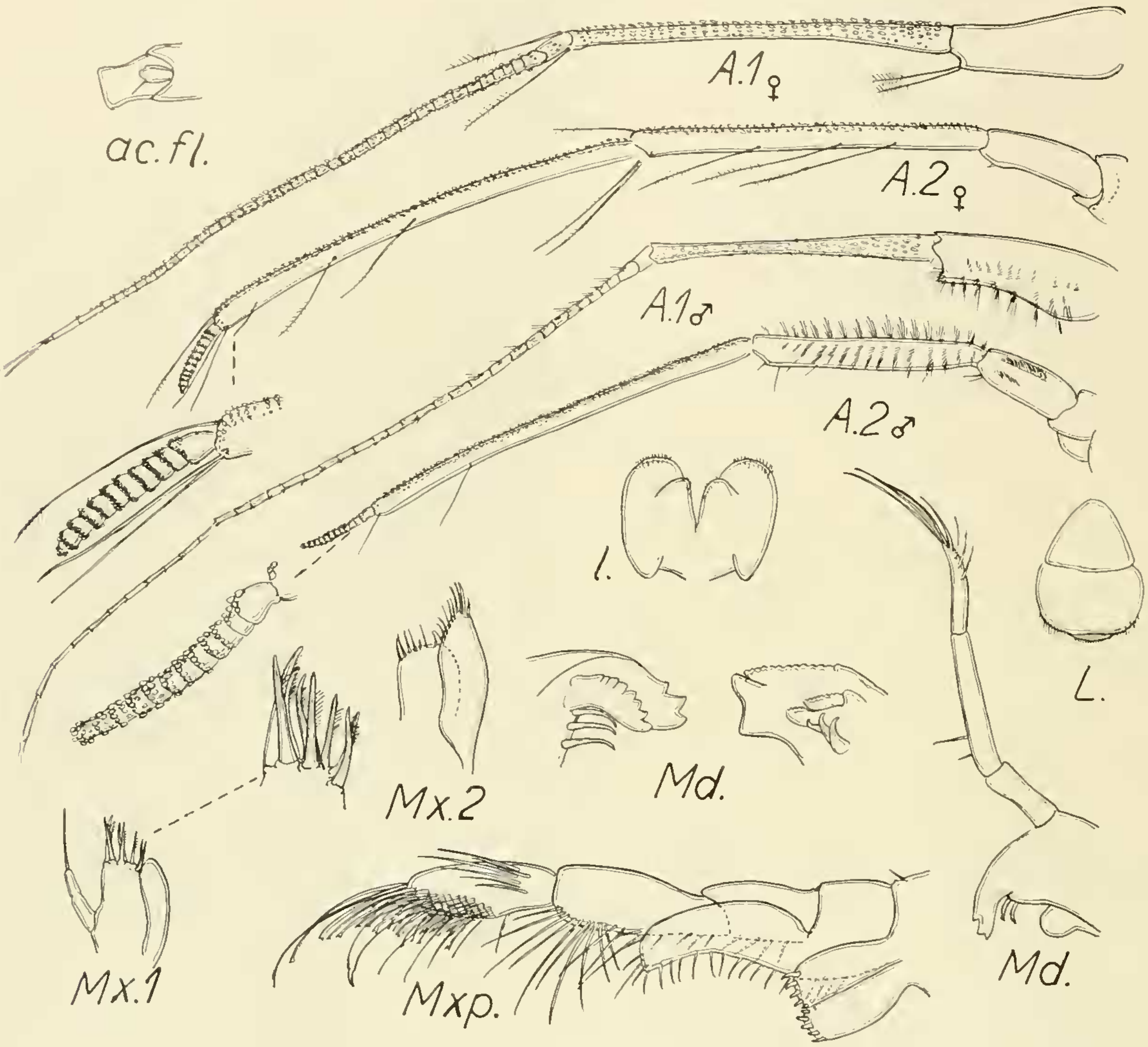

Fig. 6. *Eusirella elegans*.

69°19′ N, 15°52′ W, 552 m, ÷ 0°5. "Ingolf" St. 126: 29-VII-1896. 1 ovigerous ♀ 49 mm.
63°26′ N, 7°56′ W, 887 m, ÷ 0°6. "Ingolf" St. 138: 10-VIII-1896. 1 ♀ without marsupium 49.5 mm.
63°29′ N, 6°57′ W, 1469 m, ÷ 0°9. "Ingolf" St. 140: 11-VIII-1896. 5 specimens, including 2 smaller and 3 larger; two of these are ♂, the largest of them 49.5 mm.
63°22′ N, 6°58′ W, 1279 m, ÷ 0°6. "Ingolf" St. 141: 11-VIII-1896. 5 badly preserved specimens.
61°23′ N, 4°21′ W, about 900 m, ÷ 0°4, mud. Capt. Wandel 1890. 1 medium-sized specimen.
61°23′ N, 5°01′ W, about 475 m. 0°. Wandel 1890. 1 specimen.
63°10′ N, 7°31′ W. 1090 m. 1200 m wire out. "Thor" St. 230: 4-VIII-1904. 3 specimens.
63°36′ N, 6°20′ W, about 1900 m, 600 m wire out. "Thor" St. 12: 11-V-1913. 1 specimen.
67°19′ N, 17°55′ W. 820 m, 800 m wire out. "Thor" St. 201: 22-VII-1904. 1 specimen.
70°32′ N, 8°10′ W, 900 m. Clay with small stones. Deichmann leg. 2 specimens.

vol. 79, No. 7, 1933, p. 36, with chart); the Polar Basin from East Greenland to North of Siberia 96° E, depths usually 600–1900 m. For special localities, see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 285.

307. **Eusirus** spp.

Occurrence:
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 3 specimens (2 species, very defective).
61°07′ N, 9°28′ W, 820 m. "Thor" St. 78: 12-V-1904. 1 specimen, extremely defective.

Remarks. From "Thor" St. 99 3 specimens are available; they are, however, so defective, that they cannot be determined; probably they represent new species.

One of these species is represented by 2 specimens (♂), about 8 and 12 mm. The dorsal armature with teeth etc. is as in *E. cuspidatus* Kr. (G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 416, pl. 146), but telson (lost in the small specimen) is apically entire, not cleft, of a shape rather similar to *Apherusa borealis* (Boeck)

(G. O. SARS l. c., pl. 155 fig. 2), but a little more slender. Rostrum half as long as first joint of antenna 1.

The other species from St. 99 (♂?, about 6 mm) has no dorsal teeth on first and second metasome segments. Rostrum short, telson apically damaged.

The specimen from St. 78 has dorsal teeth on the two first metasome segments.

Genus: Meteusiroides Pirlot.

Meteusiroides Pirlot, Siboga-Exp., Monogr. 33 d, 1934, p. 218.

308. Meteusiroides curvidactyla (Pirlot).

Eusiroides curvidactyla Pirlot, Mem. Soc. R. Sc. Liége, 3e sér., vol. 15, 1919, p. 10, figs.

Meteusiroides curvidactyla Pirlot, l. c. 1934, p. 218.

Occurrence:

56°56′ N, 51°56′ W, 3500 m, 3000 m wire out. "Godthaab" St. 10: 3-VI-1928. 1 specimen (♂?), 12 mm (K. STEPHENSEN, Meddel. om Grønl., vol. 79, No. 7, 1933, p. 38).

Distribution. Off Lissabon 37°34′ N, 10°32′ W, 2500 m wire out, 1 specimen (type-locality; PIRLOT l. c. 1934).

Genus: Eusirella Chevreux.

Eusirella Chevreux, Bull. Inst. Océan. Monaco, No. 121, 1908, p. 12.

Eusirella Schellenberg, D. Tiefsee-Exp., vol. 23, 1926, p. 228.

Eusirella Chevreux, Rés. Camp. Sci. Monaco, vol. 90, 1935, p. 103.

CHEVREUX has no true diagnosis of the genus. SCHELLENBERG l. c. has a good diagnosis, but neither CHEVREUX nor SCHELLENBERG had adult specimens. An important essential is the extremely short flagellum in antenna 2, in length but one fifth of the ultimate joint of peduncle.

309. Eusirella elegans Chevreux (Figs. 6–7).

Eusirella elegans Chevreux l. c. 1908, p. 12, figs. (= Chevreux l. c. 1935, p. 103, pl. 11, figs. 4, 8).

Eusirella elegans Barnard, Discovery Reports, vol. 5, 1932, p. 194.

Eusirella valdiviæ Schellenberg l. c. 1926, p. 228, fig. (*fide* Barnard l. c.).

Occurrence:

61°08′ N, 9°28′ W, 820 m. "Thor" St. 78: 12-V-1904. About 10 specimens.

61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. About 25 specimens up to 10 mm.

Remarks. The species is well described by CHEVREUX, SCHELLENBERG, and BARNARD; though each of these authors had but a single and not adult specimen (CHEVREUX: 1 "♂" (probably a ♀ juv.), 5 mm; SCHELLENBERG: 1 specimen (♀?), 5.5 mm; BARNARD: "1 ♂", 8.5 mm)), I have not much to add to their descriptions, but give figures of all the appendages.

The material contains several ♀♀ 10 mm in length, with well developed marsupiums. Antenna 1 as long as head + mesosome + metasome; length ratio of first and second joints: 3:8; third joint is very short, not essentially longer than the joints in flagellum. Accessory flagellum (seen only by SCHELLENBERG) is squamiform, minute. Flagellum a trifle longer than peduncle, with about 38 joints. Antenna 2 a little shorter than antenna 1; length ratio of third to fifth joints: $1^1/_3$:4:5; flagellum very short, in length but one fifth of ultimate joint of peduncle, 11-articulate. Oral parts are described by CHEVREUX (with figures) and SCHELLENBERG; numbers of spines and setæ on oral parts are greater than recorded by SCHELLENBERG. First side-plate has lower hind corner acute. Hands in pereiopods 1–2 agree with CHEVREUX's figures (1908, fig. 7, G H — 1935, pl. 11 figs. 7, G H); they are much broader than in SCHELLENBERG's figure. Pereiopod 6 a trifle longer than pereiopods 5 and 7; a few ciliated setæ are preserved on pereiopods 3–7, but no doubt there have been many more.

The adult male (about 8.5 mm) is easily recognizable from the female in the setose armature of antennæ 1–2: first joint in peduncle of antenna 1 and penultimate joint of peduncle in antenna 2 have several transversal rows of stiff setæ, but probably no calceoli as in the ♀. Antennæ 1–2 not longer than in ♀. Length ratio of first and second joints in peduncle of antenna 1 is 5:8; flagellum nearly twice as long as peduncle, with about 39 joints. Antenna 2 reaches to middle of flagellum of antenna 1; length ratio of third to fifth joints: 2:4:7. Third joint of peduncle has two longitudinal rows of (sensory?) hairs. Flagellum in length but $^1/_5$ of last joint of peduncle, 12-articulate; upper side of last joint of peduncle and flagellum covered with calceoli.

I have not been able to find any sexual differences in other appendages than antennæ.

Males are probably fairly rare: in the sample from "Thor" St. 99 there are 4 adult males, but 8 ♀ with marsupium.

Distribution. 47°01′ N, 5°48′ W, 1800 m, 1600 m wire out, 2^{10} p.m.: "Thor" St. 76: 10-III-1909; 3 specimens (in the Zoological Museum, Copenhagen). Azores 38°04′ N, 26°07′30″ W, 0–2500 m, 1 specimen (type-locality; CHEVREUX l. c.). 33°53′ S, 9°26′ E, 1000–0 m, day, 1 ♂ (BARNARD l. c.). 31°21′ S, 9°46′ E, 3000–0 m, depth of the sea 5283 m, 1 specimen (*E. valdiviæ*; SCHELLENBERG l. c.).

Genus: Cleonardo Stebbing.

Cleonardo Stebbing, Tierreich, vol. 21, 1906, p. 346.

310. Cleonardo appendiculatus (G. O. Sars).

Tritropis appendiculata G. O. Sars, Norske Nordhavs-Exp., Crust., vol. 1, 1885, p. 194, pl. 16 fig. 3.

Cleonardo appendiculatus Stebbing, Tierreich, vol. 21, 1906, p. 347.

Cleonardo appendiculata K. Stephensen, Meddel. om Grønl., vol. 79, No. 7, 1933, p. 39, figs.

Occurrence:

Baffin Bay 69°50′ N, 61°37′ W, 1880 m, 3000 m wire out. "Godthaab" St. 54: 14-VII-1928. 2 specimens (K. STEPHENSEN l. c. 1933).

Distribution. NW. of Northern Norway 70°51′ N, 13°03′ E, 2354 m, ÷ 1°2, Biloculina clay (type-locality: G. O. SARS l. c.).

311. Cleonardo microdactylus K. Stephensen.

Cleonardo microdactylus K. Stephensen, Vid. Meddel. Naturh. Foren. Kjøbenhavn, vol. 64, 1912 (1913), p. 90, figs.

Cleonardo microdactylus K. Stephensen, Meddel. om Grønl., vol. 79, No. 7, 1933, p. 10, figs.

Occurrence:

64°06′ N, 55°18′ W, 1040–1100 m, 1200 m wire out (type-locality; K. STEPHENSEN 1912).

63°19′ N, 26°50′ W, 1130 m, 1000 wire out; 62°19′ N, 56°00′ W, 2550 m, 2500 m wire out; 56°56′ N, 3500 m, 3000 m wire out (K. STEPHENSEN 1933).

Distribution. 17°10′ N, 18°02′ W, 2240 m wire out (PIRLOT, Mém. Soc. R. Sci. Liége, sér. 3, fasc. 3, 1929, p. 16).

Genus: Rhachotropis S. J. Smith.

Rhachotropis G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 123.

Rhachotropis Stebbing, Tierreich, vol. 21, 1906, p. 347.

The following species were erected from 1906 (STEBBING, l. c.) to 1938 (Zoological Record):

R. anomala Barnard (close to *R. gracilis* Bonnier; near Cape Point, 650 fath.). Barnard, Ann. S. Afr. Mus., vol. 15, 1916, p. 182, no fig.

R. lomonosovi Gurjanova (near *R. macropus* G. O. Sars and *R. leucophthalma* G. O. Sars; Kara Sea, 500–350 m). Gurjanova, Zool. Anzeiger, vol. 108, 1934, p. 124, figs.

R. natator (Holmes) (Santa Catalina Island, California, 2196–2228 fath.; Santa Cruz Island, 447–510 fath.). *Gracilipes natator* Holmes, Proc. U. S. Nat. Mus., vol. 35, 1909, p. 527, figs. – *R. natator* Shoemaker, Contrib. Canad. Biol., vol. 5, 1929 (1930), p. 316.

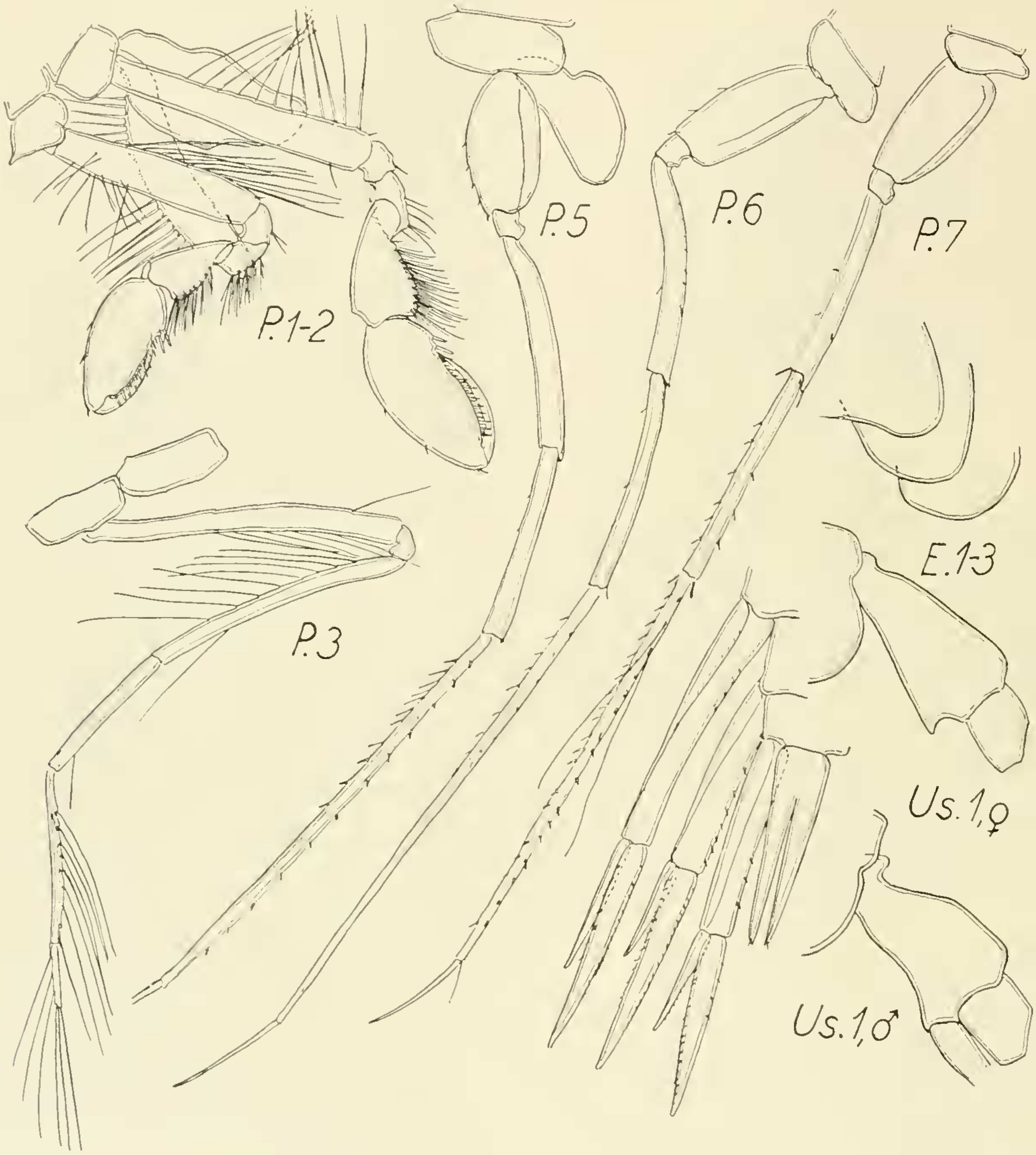

Fig. 7. *Eusirella elegans* ♀, and urosome segment 1 ♂.

R. antarctica Barnard (close to *R. inflata* (G. O. Sars); South Shetlands etc.). Barnard, Discovery Rep., vol. 5, 1932, p. 194, no fig.

[*R. diploops* Strauss (nomen nudum; Atlant.). Strauss, D. Tiefsee-Exp., vol. 20, 1909, p. 38 (no description), pl. 4 figs. 24, 25. Does not belong to this genus, see Barnard, Discovery Rep., vol. 5, 1932, p. 193.]

R. distincta (Holmes), see below, species No. 319.

R. hunteri Nicholls (near *R. kergueleni* Stebbing; antarctic) Nicholls, Australas. Antarct. Exped. 1911–14, Sci. Rep. 2, part 2, 1938, p. 98, figs.

R. lobata Shoemaker (c. 18°40′ N, 64°50′ W, 350–550 m). Shoemaker, Smithson. Misc. Coll., vol. 91, no. 12, 1934, p. 3, figs.

R. paeneglaber Barnard (near Cape Point, 250–400 fath.). Barnard, Ann. S. Afr. Mus., vol 15, 1916, p 181, pl 27 fig. 10

R. palporum Stebbing (59°36′ N, 7° W, 400 m). Stebbing, Jour. Zool. Soc. London, vol. 30, 1908, p. 194, pl. 28. – Barnard, Ann. S. Afr. Mus., vol. 15, 1916, p. 179.

R. palporum f. *pacifica* Schellenberg (8°7.5′ S, 104°10.5′ W, 2084 fath.). Schellenberg, Bull. Mus. Comp. Zool., Harvard Coll., vol. 69, No. 9, 1929, p. 201.

R. platycera Barnard (close to *R. kergueleni* Stebbing; Great Barrier Reef). – Barnard, Great Barrier Reef Exped., vol. 4, No. 4, 1931, p. 122, fig.

R. proxima Chevreux (close to *R. rostrata* Bonnier; Bay of Biscay, 4380 m). – Chevreux, Bull. Inst. Monaco, No. 204, 1911, p. 11, figs. = Chevreux, Rés. Camp. Sci. Monaco, vol. 90, 1935, p. 110, figs.

R. sibogæ Pirlot (close to *R. kergueleni* Stebbing; 8° S, 117° E, 1310 m). Pirlot, Siboga-Exp., vol. 33d, 1934, p. 216, figs.

R. sp. (close to *R. helleri* (Boeck)). Schellenberg, Further Zool. Res. Swed. Antarct. Exped. 1901–03 ... edited by Sixten Bock, vol. 2, No. 6, Stockholm 1931, p. 173.

313. **Rhachotropsis (kergueleni** Stebbing?) (Fig. 8).

Rhachotropis kergueleni Stebbing, "Challenger", vol. 29, 1888, p. 955, pl. 85.

Rhachotropis kergueleni Stebbing, Tierreich, vol. 21, 1906, p. 349.

Rhachotropis kergueleni Barnard, Ann. S. Afr. Mus., vol. 15, 1916, p. 718.

The species was established by STEBBING on two specimens, probably males. Later BARNARD l. c. recorded an ovigerous female; he writes that it agrees with STEBBING's males "in all respects

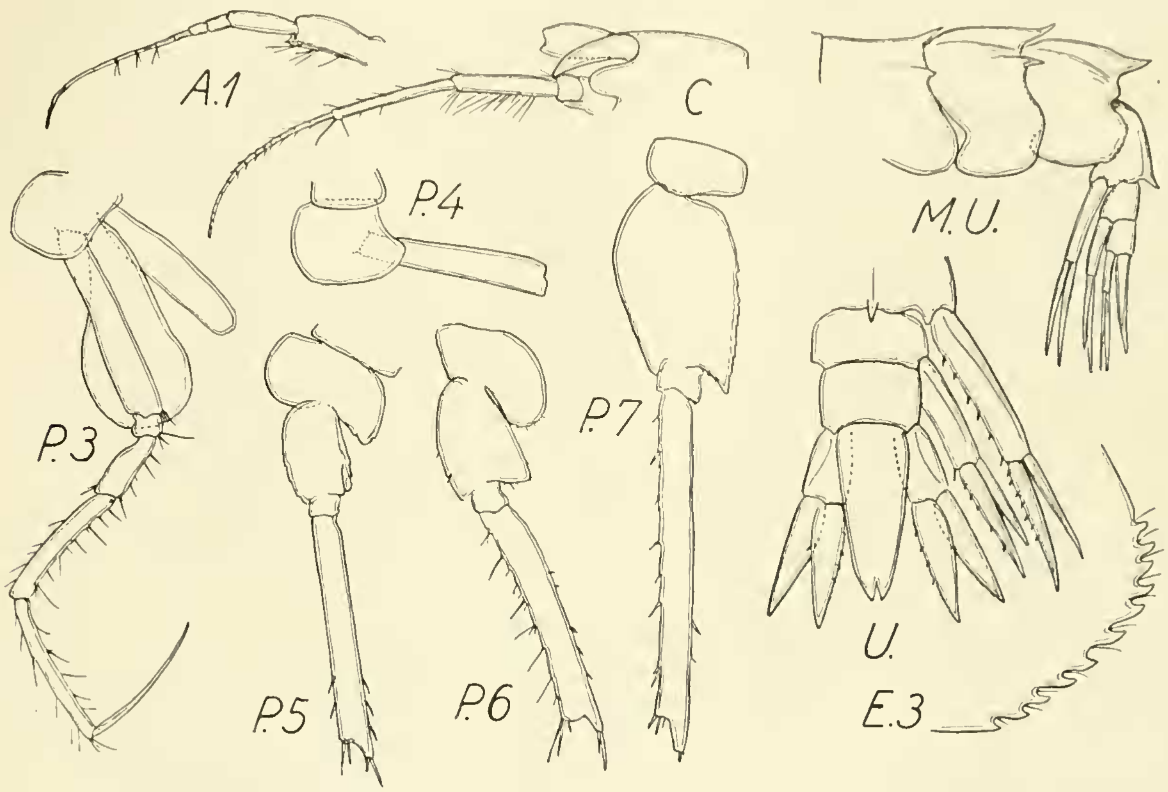

Fig. 8. *Rhachotropis (kergueleni?)* ♀; "Ingolf" St. 35.

312. **Rhachotropis aculeata** (Lepechin).

Rhachotropis aculeata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 424, pl. 149.

Rhachotropis aculeata Stebbing, Tierreich, vol. 21, 1906, p. 348.

Occurrence:

64°07′ N, 11°12′ W, 446 m, 2°5. "Ingolf" St. 4: 13-VI-1895. 2 specimens up to about 20 mm.

65°00′ N, 11°16′ W, 584 m, ÷ 0°1. "Ingolf" St. 59: 20-V-1896. 1 specimen about 35 mm.

Though it is very abundant along the coasts of Greenland and Iceland (but not the Faroes) at depths from about 20–300 m, it is very rarely found at depths so great as the two above-named from the "Ingolf"-Expedition. The occurrences hitherto known from depths > 400 m are nearly all in the "Ingolf"-area and are as follows: NW. Greenland 77°17′ N, 69°59′ W, 930 m, ÷ 0°4 (K. STEPHENSEN, Meddel. om Grønl., vol. 79, No. 7, 1933, p. 42); North of Iceland 66°32′ N, 18°50′ W, 480 m, and East Iceland 63°25′ N, 10°30′ W, 505 m (K. STEPHENSEN, Zool. of Iceland, vol. 3, No. 26, 1940, p. 48); 40°59′ N, 51°15′ W, 1100 m, 3°7 (J. GRIEG, Rep. Sci. "Michael Sars", vol. 5, 1931, p. 3).

Distribution. Widely distributed in the Arctic with adjacent areas, probably circumpolar; for special localities see K. STEPHENSEN, Tromsø Mus. Skr., vol. 3, 1935–42, p. 287, for map see K. STEPHENSEN, Zool. of Iceland, vol. 3, No. 26, 1940, p. 80.

except the shorter antennæ and the slightly more dehiscent apices of the telson".

Occurrence:

64°54′ N, 55°10′ W, 740 m, 3°8. "Ingolf" St. 27: 1-VII-1895. 1 ovigerous ♀.

65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. 2 ♀ with marsupium.

Remarks on ♀ with large marsupial plates (but without marginal setæ), about 12 mm ("Ingolf" St. 35). In the long rostrum, the dorsal armature of metasome segments 1–3 and urosome segment 1, the serrate hind margin of metasome segment 3, the very small second joint of pereiopods 5–6, the acute lower hind corner of second joint of pereiopod (6–)7, and the telson, this form is very close to *R. kergueleni* Stebbing (STEBBING's two specimens were probably males).

Rostrum is only a trifle shorter than first joint of antenna 1 (regarding *R. kergueleni* Stebbing says only that "the rostrum is very long and narrow, depressed between the upper antennæ"). Eyes could not be found. Metasome segment 1 has a dorsal tooth, but no dorsal carina; metasome segments 2 and 3 and urosome segments have each a high dorsal carina euding in a large tooth. Epimeral part of metasome segment 3 dentate only along the lower two thirds, uot also along the upper third. Antennæ 1 rather similar to STEBBING's figure, but much shorter (STEBBING's specimens of *R. kergueleni* were ♂?); they are as long as head + 3 (or 4) mesosome segments, reach a trifle beyond peduncle of antenna 2. There is a little, bud-like accessory flagellum, as in *R. rostrata* (Fig. 9), and flagellum has 8–9 joints. Peduncle of antenna 2 rather similar to that of ♂, but shorter; flagellum as long as the two distal joints combined, 14–15-articulate. Oral parts were not dissected out. Pereiopods 1–7 similar to *R. kergueleni* (distal joints of prp. 4–7 are lost), except that prp. 5 (Stebbing: prp. 3) has lower hind corner of second joint rounded, not acute, and prp. 6 (Stebbing: prp. 4) has hind edge of second joint rather smooth, not markedly serrate as in Stebbing's figure. Also uropods 1–3 and telson agree with *R. kergueleni*; but I have not been able to find the plumose setæ and small spinules on telson drawn by Stebbing.

Length 12 mm (Stebbing: 11 mm (♂?); Barnard: 15 mm (♀ ovig.)).

As stated above the "Ingolf"-species is very close to *R. kergueleni*.

According to the literature 7 species are said to be closely allied to the said species; this means probably that the lower hind corner of second joint of pereiopod 7 is acute, and that rostrum is rather long.

But some of the species have an other arrangement of the dorso-lateral teeth (see the table). Regarding the number of the

Rhachotropis, species close to *R. kergueleni*
(for literature, see above, pp. 14–15).

	Dorsal tooth					Dorso-lateral teeth			
	Mss. 7	Mts. 1	Mts. 2	Mts. 3	Us. 1	Mts. 1	Mts. 2	Mts. 3	Us. 1
R. anomala	—	—	×		×	—	—	—	—
R. antarctica	—	×	×	○	×	×	×	×	○
R. hunteri	—	×	×	+	×	×	×	○	—
R. kergueleni	—	×	×	×	×	×	×	—	—
R. paeneglaber	—	—	×	—	×	—	×	—	—
R. platycera	×	×	×	×	×	×	×		
R. proxima	—	×	×	×	+	×	×	—	—
R. sibogæ	—	×	×	×	○	×	×	+	—
The "Ingolf"-species ...	—	×	×	×	×	×	×	—	—

Explanation of table. Mss. 7 = mesosome segment 7. — Mts. 1-3: metasome segments 1-3. — Us. 1: Urosome segment 1. + is a minute terminal point, not a real tooth.

said teeth only three agree with the "Ingolf"-species; they are: *R. hunteri*, *R. kergueleni*, and *R. proxima*. But *R. proxima* differs in apex of telson (apically simply cleft, the two apices not dehiscent); *R. hunteri* has the median carina on metasome segment 3 "rounded above, produced into minute terminal point". The present specimens are more closely allied to *R. kergueleni* than to any of the other species, and the differences from Stebbing's description and drawings are rather small. Therefore I have determined them as *R.* (*kergueleni!*).

Distribution. Kerguelen, depth not specified (type-locality; Stebbing 1888). Cape Point N. 81° E., distant 32 miles, 400 fathoms (Barnard 1916).

314. Rhachotropis grimaldii (Chevreux).

Rhachotropis grimaldii Chevreux, Rés. Camp. Sci. Monaco, vol. 16, 1900, p. 68, p. 9 fig. 1 (1 ovigerous ♀).
Rhachotropis grimaldii Stebbing, Tierreich, vol. 21, 1906, p. 350.
Rhachotropis elegans Bonnier, Ann. Univ. Lyon, vol. 26, 1896, p. 658, pl. 39 fig. 4 (2 ♂).
Rhachotropis elegans Stebbing, Tierreich, vol. 21, 1906, p. 350.
Rhachotropis grimaldii Barnard, Ann. S. Afr. Mus., vol. 15, 1916, p. 179 (= *R. elegans*).
Rhachotropis grimaldii = *R. elegans* Chevreux, Travailleur et Talisman, Amphip. 1927, p. 95, figs., p. 96.

Occurrence:
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 2 ♂.
62°10′08″ N, 19°36′ W, 1900–2150 m. "Thor" St. 164: 12(13)-VII-1903. 1 ♀ with marsupium.

Remarks. The specimens from "Thor" St. 99 (1904) have the proximal joints of antenna 1 preserved; a small accessory flagellum is present (as in Bonnier l. c., fig. 4c). The two ♂♂ have mesosome segments dorsally undulating behind as in Bonnier's fig. (♂), the ♀ has the mesosome segments dorsally smooth as in Chevreux's fig. (♀); the difference seems to be a sexual character.

Distribution. 1. Atlantic Ocean. 44°17′ N, 4°45′ W, 960 m, mud (*R. elegans*, type-locality; Bonnier l. c.). Between 43°12′50″ N, 11°53′30″ W, 510 m, and 43°12′15″ N, 11°52′ W, 363 m, mud (*R. grimaldii*, type-locality; Chevreux 1900). 43°46′ N, 4°27′ W, 1143 m, mud; 38°06′ N, 11°31′ W, 460 m, mud; 21°53′ N, 19°22′ W, 888 m, clayish sand; 21°53′ N, 19°50′ W, 655 m, clayish sand (*R. grimaldii*; Chevreux 1927). Cape Point E by N, distant 29 miles, 250–300 fm.; Cape Point N 81° E, distant 32 miles, 460 fm.; Cape Natal N by E., distant 24 miles, 440 fm. (*R. grimaldii* = *R. elegans*, Barnard 1916).

2. Mediterranean. 43°2′57″ N, 2°58′30″ E (off Marseille), 555 m, mud (*R. grimaldii*, Chevreux 1927).

315. Rhachotropis helleri (Boeck).

Rhachotropis helleri G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 426, pl. 150.
Rhachotropis helleri Stebbing, Tierreich, vol. 21, 1906, p. 351.
Rhachotropis helleri Sexton, Proc. Zool. Soc. London, 1909, p. 869, figs.

Occurrence:
65°14′ N, 55°42′ W, 791 m, 3°5. "Ingolf" St. 28: 1-VII-1895. 1 ♀ with large but empty marsupium, about 14 mm; most of the legs are missing.
64°15′ N, 29°06′ W, 1070 m, 4°4. "Ingolf" St. 90: 21-VI-1896. 1 ♀ with large but empty marsupium, about 13 mm; very defective, the determination not certain.

It is new to these West Atlantic waters, but recorded from East Greenland.

Distribution. From Kara Sea and Spitsbergen to Bay of Biscay; also from recorded Bering or Okhotsk Sea. It has however, frequently been confused with the next species, *R. macropus*, and therefore several records are not certain. Further see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 289.

316. Rhachotropis (macropus G. O. Sars?).

Rhachotropis macropus G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 428, pl. 151 fig. 1.
Rhachotropis macropus Stebbing, Tierreich, vol. 21, 1906, p. 352.

Occurrence:
66°23′ N, 8°52′ W, 1090 m, ÷ 0°6. "Ingolf" St. 103: 10-VII-1896. 1 ♀ with large, but empty marsupium, very defective, length from head to urosome segment 1 17 mm (urosome segments 2–3 and telson are lost); the determination not certain.

Distribution. About as *R. helleri* (above), see K. Stephensen l. c. 1935–42, p. 290.

317. Rhachotropis rostrata Bonnier (Fig. 9).

Rhachotropis rostrata Bonnier, Ann. Univ. Lyon, vol. 26, 1896, p. 653, pl. 39 fig. 2 (1 ♂, 13 mm).
Rhachotropis rostrata Stebbing, Tierreich, vol. 21, 1906, p. 353.
Rhachotropis rostrata Sexton, Proc. Zool. Soc. London, 1909, p. 869, pl. 81, figs. 46–48 (4 ♂, 9–10 mm).

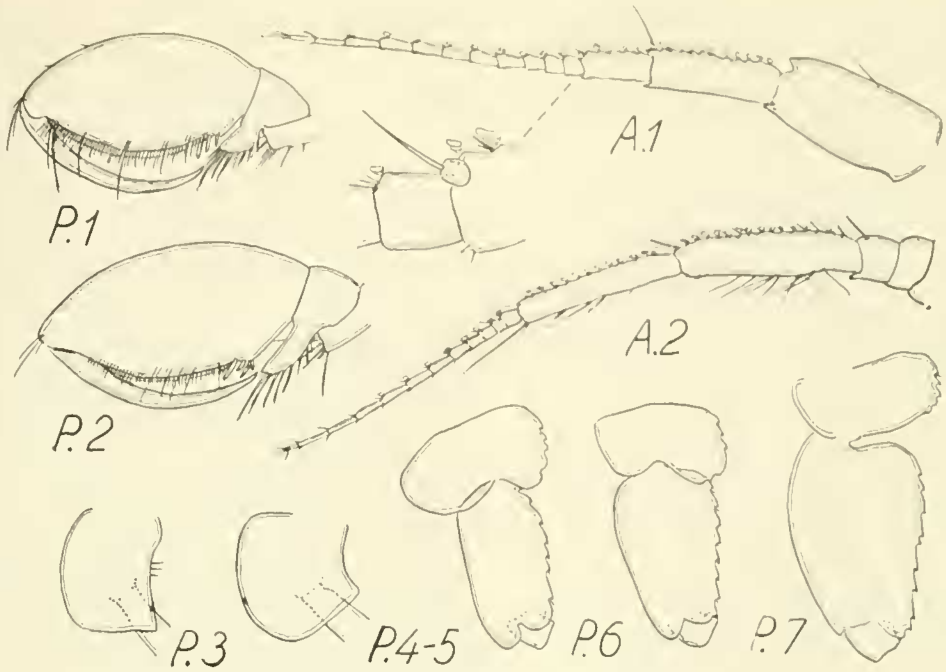

Fig. 9. *Rhachotropis rostrata* ♀.

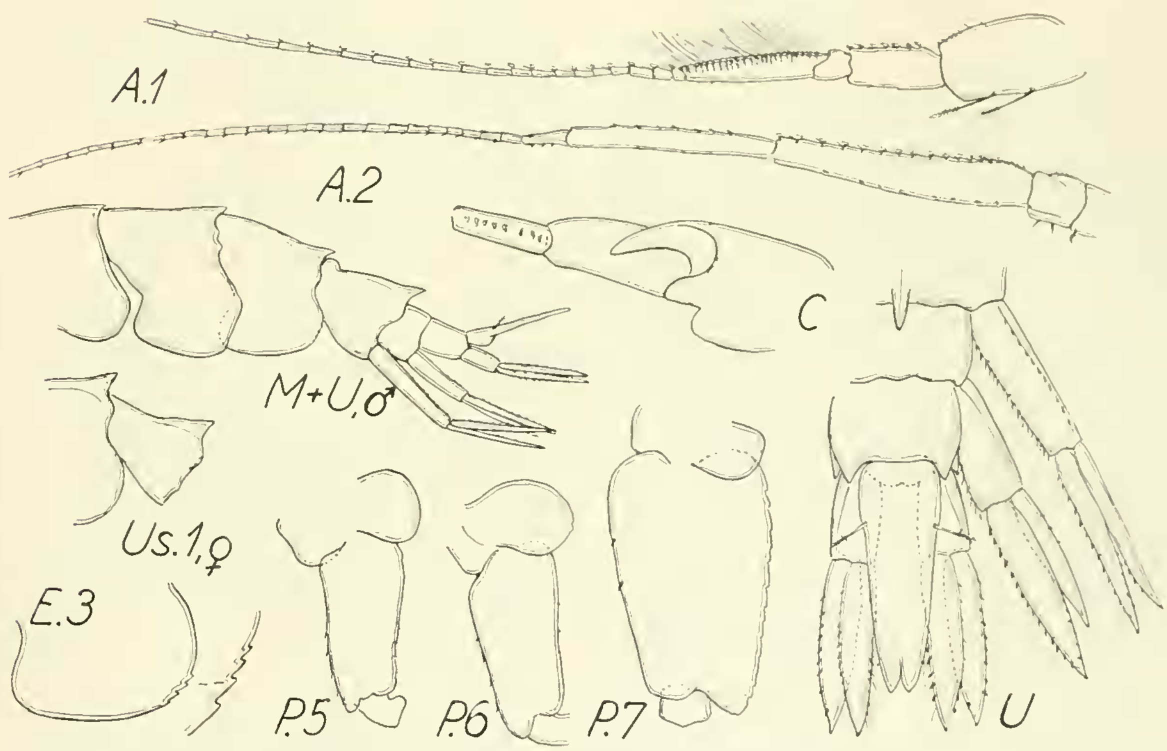

Fig. 10. *Rhachotropis faeroensis*. All the figures are from ♂, except urosome segment 1 in lateral view which is from ♀.

Rhachotropis rostrata Pesta, Zool. Anzeiger, vol. 51, 1920, p. 33, fig. 4 (1 specimen (sex?), 10.5 mm).

Rhachotropis rostrata Chevreux, Rés. Camp. Sci. Monaco, vol. 90, 1935, p. 110 (2 specimens, sex?).

Occurrence:

61°07′ N, 9°30′ W, 835 m. "Thor" St. 78: 12-V-1904. 7 specimens, including 6 ♀ with marsupium, about 10 mm, very defective.

61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. About 10 specimens, including 2 ♀ with large, but empty marsupium, 11 mm, very defective.

Remarks on ♂. Like Bonnier I have not found accessory flagellum, though it is present in ♀ (see below); on the whole the few ♂♂ seem to agree well with Bonnier l. c. and Pesta l. c. The oral parts were not dissected out.

Remarks on ♀. As no ♀ is described in the literature, I give some remarks and some figures of this sex.

♀ 10 mm, very defective. Antenna 1 as long as head + mesosome; first joint of peduncle rather stout; length ratio of joints in peduncle: 3:2:1; upper edge of second joint has about 12, third joint has 5 calceoli. There is a little, bud-like accessory flagellum. Flagellum, in length equal to peduncle, has about 11 joints. Antenna 2 a trifle longer than antenna 1, the two distal joints in peduncle somewhat equal in length and calceoliferous along upper edge; flagellum in length $^2/_3$ of peduncle, 12-articulate. Hands of pereiopods 1–2 more stout than drawn by Bonnier (1896, fig. 2n) and Pesta (1920, fig. 7d). Pereiopods 3–7 more or less defective; I give figures of side-plates 3–7 and of basal parts of pereiopods 5–7, of which Bonnier has description but no figures. Uropods 1–3 do no differ from ♂.

Distribution. 44°17′ N, 4°38′ W, 950 m, clay (type-locality; Bonnier 1896). 48°07′5 N, 8°13′ W, about 450 m, fine sand (Sexton 1909). 33°59′30″ N, 8°12′15″ W, 851 m, red clayish sand with Globigerina (Chevreux 1935). Adria 42°11′ N, 17°51′30″ E, 1216 m (Pesta 1920).

318. **Rhachotropis distincta** (Holmes).

Gracilipes distincta Holmes, Proc. U. S. Nat. Mus., vol. 35, 1908, p. 529, fig.
Rhachotropis distincta Shoemaker, Contrib. Canad. Biol. Fish., new ser., vol. 5, 1930, p. 98, figs.
It is probably synonymous with
Rhachotropis gracilis Bonnier, Ann. Univ. Lyon, vol. 26, 1896, p. 657, pl. 39 fig. 3.
Rhachotropis gracilis Stebbing, Tierreich, vol. 21, 1906, p. 353.
Rhachotropis gracilis Chevreux, Amphip. Travailleur-Talisman, 1927, p. 97.

Occurrence:
62°57′ N, 19°58′ W, 957 m. "Thor" St. 166: 14-VII-1903. 1 ♀ with marsupium, about 8 mm.

Remarks. The present specimen is rather defective; antenna 1 and distal joints of pereiopods 4–7 are entirely missing. It was not dissected; but it seems to agree excellently with Shoemaker's description of *R. distincta* which is said (Shoemaker l. c., p. 99) to be "either identical or very closely related" to *R. gracilis* Bonnier.

Distribution. 1. *R. distincta.* Santa Cruz island, California, about 900–1200 m, 1 ♀ (type-locality; Holmes l. c.). Cabot Strait (south of New Foundland), 378 m, soft mud, 15 specimens (♂, ♀) (Shoemaker l. c.). Off Martha's Vineyard 39°49′ N, 71°25′ W, 400 m, 2 specimens (in the Zool. Museum, Copenhagen, kindly presented by U. S. Nat. Mus.).
2. *R. gracilis.* Bay of Biscay 44°17′ N, 4°38′ W, 950 m, mud, 17 specimens, and 44°05′ N, 4°45′ W, 960 m, mud, 4 specimens (type-localities; Bonnier l. c.). 43°46′ N, 4°27′ W, 1143 m, mud, 1 specimen (Chevreux l. c.).

319. **Rhachotropis faeroensis** n. sp. (Fig. 10).

Occurrence:
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 4 specimens.
61°08′ N, 9°28′ W, 820 m. "Thor" St. 78: 12-V-1904. 2 specimens.

Description. Rostrum extends to the middle of first joint of antenna 1, slightly curved; lateral lobes of head half as long as rostrum, obtuse. Eyes probably absent. Pereion not carinate, but the three metasome segments and first urosome segment each with a median tooth, second metasome segment besides with two pairs of very small dorso-lateral teeth. Urosome segment 1 in ♂, but not in ♀, with a deep dorsal depression behind a knob. Third epimeral plate evenly rounded, with a few (3–4) small denticulations. Telson covers the proximal two thirds of the rami of uropod 3, evenly tapering, cleft for about $^1/_8$ of the length, apices acute.

Antennæ 1–2 in ♂ at least as long as head + mesosome (apices lost); accessory flagellum could not be found. Antenna 1 ♂ has in flagellum > 22 joints, antenna 2 > 26 joints. Antennæ 1–2 ♀ are lost. Oral parts but slightly differing from *R. helleri* (G. O. Sars, Crust. of Norway, vol. 1, 1895, pl. 150), but palp of mandibles a little longer. Pereiopods 1–2 agree fairly well with those of *R. rostrata* (fig. 9), except that lobe on fifth joint is shorter and broader. On pereiopods 3–4 nothing is noteworthy. Side-plates of pereiopods 5–7 with hind margin entire, except for a couple of very minute serrations in pereiopod 6. Pereiopods 5–6, second joint with hind margin entire; in prp. 7 it is faintly serrate, with lower hind corner rounded quadrate; distal parts of prp. 5–7 lost. Uropod 1 slender, rami in length subequal to peduncle, outer ramus a trifle shorter than inner. Uropods 2–3, rami lanceolate; outer ramus in urop. 2 in length $^3/_4$ of inner. Uropod 3, the two rami equal in length.

All the specimens are more or less defective.

Length: ♂ about 10 mm; ♀ with large marsupium about 8 mm.

This species is rather close to *R. paeneglaber* Barnard (Ann. S. Afr. Mus., vol. 15, 1916, p. 181, pl. 27 fig. 10). There seem to be the following differences:

	R. paeneglaber	*R. faeroensis*
Metasome segment 2	1 pair of dorso-lateral teeth	2 pairs of very small dorso-lateral teeth
Metasome segment 3	no dorsal teeth	1 dorsal tooth
Epimeral plate 3	many (according to Barnard's fig. at least about 10) teeth	3–4 very small teeth
Telson	cleft for $^1/_3$ of its length	cleft for $^1/_8$ of its length
Pereiopod 7, lower hind corner of second joint	quadrate, somewhat acute	quadrate, somewhat rounded

Family: **Lepechinellidæ** Schellenberg.

Dorbanellidæ Schellenberg, Mitt. Zool. Mus. Berlin, vol. 11, 1925, p. 205.
Lepechinellidæ Schellenberg, D. Südpolar-Exped., vol. 18, 1926, p. 344.
Lepechinellidæ Pirlot, Siboga-Exp., Monogr. 33c, 1933, p. 156.

This family is probably (Pirlot l. c., p. 167) close to the fam. *Gammaridæ*, representing an abyssal branch of that family; previously Schellenberg and Barnard had placed it near the fam. *Atylidæ*.

Up to 1938 two genera are described.

Key of the genera.

Palp of mandible enormous .... *Paralepechinella* Pirlot l. c., p. 161 (with one sp.: *P. longipalpa* Pirlot l. c., p. 161, figs.; Makassar Strait, 1300 m).
Palp of mandible normal .... *Lepechinella* Stebbing

Genus: **Lepechinella** Stebbing.

Lepechinella Stebbing, Jour. Linn. Soc., Zool., vol. 30, 1908, p. 191.
Dorbanella Chevreux, Bull. Inst. Océanogr., Monaco, No. 296, 1914.
Lepechinella Pirlot, l. c. 1933, p. 156 (with lit.).

Up to 1938 six species are described.
Type-species: *L. chrysotheras* Stebbing 1908 (see below).

Key to the species.

1 a. Side-plate 1 apically cleft .... 2.
1 b. Side-plate 1 not cleft .... 3.
2 a. Lateral lobe of head produced into two spines .... *L. schellenbergi* n. nom. (see below)
2 b. Lateral lobe of head not produced into two spines ... *L. chrysotheras* Stebbing (see below).
3 a. No dorsal spines on mesosome segments ... *L. ectrata* Barnard (Discovery Rep., vol. 5, 1932, p. 186, fig.; South Shetlands, 342 m)
3 b. Dorsal spines or teeth on mesosome segments .... 4.
4 a. Dorsal spines on metasome segments much longer than those on mesosome segments .... *L. curvispinosa* Pirlot (l. c. 1933, p. 156, figs.; east of Celebes, 835 m)
4 b. Dorsal spines on metasome segments not much longer than those on mesosome segments .... 5.
5 a. Lateral lobe of head produced into two spines, in length equal to rostrum .... *L. drygalskyi* Schellenberg (l. c. 1926, p. 345, fig.; "Gauss"-Station, depth?)
5 b. The upper of the two spines on lateral lobe of head much longer than rostrum, the lower minute .... *L. echinata* (= *Dorbanella ech.* Chevreux) (l. c. 1908, p. 1, figs.; Bay of Biscay 46 17'30" N, 5 42' W, 1380 m).

320. Lepechinella chrysotheras Stebbing.

Lepechinella chrysotheras Stebbing, Jour. Linn. Soc. London, Zool., vol. 30, 1908, p. 192, pl. 27.

Occurrence:
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 3 ♂ up to about 8 mm.

STEBBING had only a single specimen (a ♂). I have nothing to add to his description.

Distribution. 59°41′ N, 3°08′ W, 850 m, 1 ♂ (type-locality; STEBBING l. c.).

321. Lepechinella schellenbergi nom. nov. (Fig. 11).

Lepechinella sp. Schellenberg, Mitt. Zool. Mus. Berlin, vol. 11, 1925, p. 206, fig.

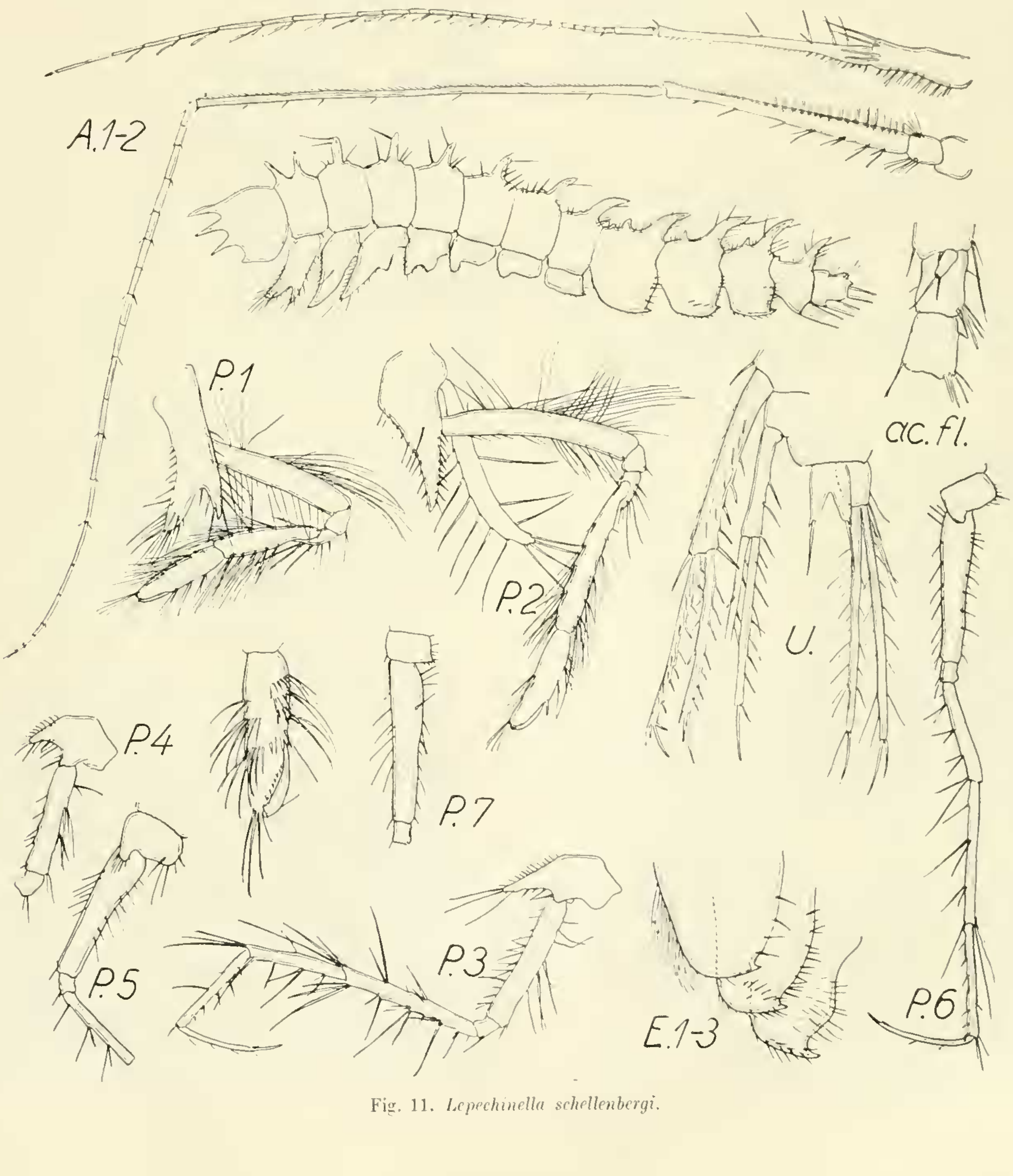

Fig. 11. *Lepechinella schellenbergi.*

Lepechinella sp. K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 271 (translation from Schellenberg l. c.).

Occurrence:

66°35′ N, 56°38′ W, 599 m, 3°9. "Ingolf" St. 32: 11-VII-1895. 3 specimens.

65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. About 10 specimens.

Remarks. These specimens agree fairly well with Schellenberg l. c. (S. had but a single, rather defective specimen); a few additions or corrections are, however, needed, and I add figures of all appendages except oral parts.

Schellenberg writes: "Integument stark inkrustiert"; but in the "Ingolf"-specimens it is rather soft. Rostrum of somewhat varying length, equal to or longer than upper spine in lateral lobe of head. Schellenberg writes: "II–IV Seitenplatte nehmen an Länge gleichmässig ab"; by a miswriting I have (l. c.) written "Increasing in length".

Antenna 1 about as long as mesosome + metasome, antenna 2 about $1^1/_2$ times as long. Flagellum in antenna 1 twice as long as peduncle, has about 26 joints. Antenna 2, ultimate joint of peduncle very slender, in both sexes nearly twice as long as penultimate joint; flagellum somewhat longer than ultimate joint of peduncle, has about 20 joints, most of them very long. Oral parts were not dissected out.

Uropoda (not described by Schellenberg) long, slender, reaching equally far behind. Uropod 1, rami in length equal to peduncle, in uropod 2 somewhat longer than peduncle, in uropod 3 even 5 times as long as peduncle. Telson somewhat longer than peduncle in uropod 3, slender, cleft in distal half; either half terminating in a tooth and a long spine.

Length up to 7 mm; Schellenberg had a single specimen, length without urus 5.5 mm.

There is no sexual difference in antennæ 1–2 and pereiopods 1–2.

Distribution. North of Spitsbergen 81°20′ N, 20°30′ E, 1000 m (Schellenberg l. c.).

Family: Gammaridæ Leach.

Gammaridæ G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 481.
Gammaridæ Stebbing, Tierreich, vol. 21, 1906, p. 364.

Genus: Melita Leach.

322. Melita richardi Chevreux (Fig. 12).

Melita richardi Chevreux, Rés. Camp. Sci., Monaco, vol. 16, 1900, p. 81, pl. 10 fig. 3.

Occurrence:

63°06′ N, 56°00′ W, 2258 m, 2°4. "Ingolf" St. 24: 25-VI-1895. 1 specimen, about 6 mm.

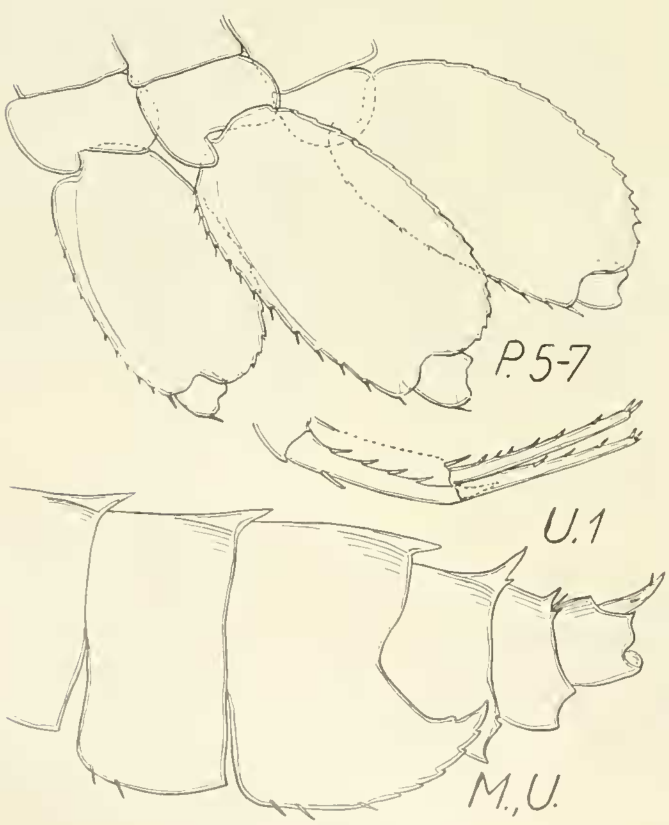

Fig. 12. *Melita richardi.*

62°10′08″ N, 19°36′ W, 1900–2150 m. "Thor" St. 164: 12(13)-VII-1903. 2 specimens, about 6–9 mm.

Remarks. On the whole these specimens agree well with Chevreux l. c., but are more or less defective; i. a. uropod 3 is lost in all the specimens.

The largest specimen is probably ♀ (pereiopod 2!; see Chevreux l. c., fig. 2c), but I have found no marsupial plates. It differs from Chevreux l. c. in the following details: second joint in pereiopods 5–7 is broader; epimeral plates of metasome segments 1 and 2 have lower hind corner rectangular (according to Chevreux plate 1 is "arrondi", plate 2 is "légèrement prolongé et aigué"), that of segment 3 is denticulate not only in upper edge, but especially along under edge. Urosome segment I has 3 dorsal teeth (not one), the central of which is the largest; also urosome segment 2 has dorsally 3 teeth, + 2 spines (Chevreux writes "cinq petites dents"). Uropod 1 has a stout spine at proximal fourth of peduncle.

Distribution. 38°34′30″ N, 30°26′30″ W, 1287 m, fine sand, 28 specimens (type-locality), and 38°38′ N, 30°28′15″ W, 620 m, sand and gravel, 1 specimen (Chevreux l. c.). 39°21′20″ N, 31°05′53″ W, 1360 m; 39°21′20″ N, 31°05′45″ W, 1360 m; 37°39′ N, 25°17′45″ W, 1230 m; 38°47′ N, 30°16′ W, 1331 m (Chevreux, Rés. Camp. Sci., Monaco, vol. 30, 1935, p. 115).

323. Melita abyssorum n. sp. (Figs. 13–14).

Occurrence:

63°06′ N, 56°00′ W, 2258 m, 2°4. "Ingolf" St. 24: 25-VI-1895. About 10 specimens (♀; no ♂?), length up to about 25 mm.

Description of ♀ with empty marsupium, 25 mm. Back rounded; all segments entirely smooth, but urosome segment 1 with one small dorsal tooth, segment 2 with one pair of dorsolateral teeth. Head, lateral lobe rounded, very little protruding; post-antennal corner rectangular. Eyes entirely missing. Antenna 1 nearly as long as body; first joint with two hairs on under edge; second joint in length equal to first joint, but more slender, with a few hairs on upper edge; third joint about $^1/_3$ the length of second joint. Flagellum twice as long as peduncle, with about 45 joints. Accessory flagellum 5-articulate, as long as three first joints of flagellum. Antenna 2 half the length of antenna 1, the two distal joints of peduncle subequal in length; flagellum half the length of peduncle, about 12-jointed. Oral parts not essentially different from *M. palmata* (G. O. Sars, Crust. of Norway, vol. 1, 1895, pl. 179), but mandibles have palp much more slender, with first joint longer, and with much fewer setæ, about as in *M. obtusata* (G. O. Sars l. c. 1895, p. 180 fig. 1 M); maxilla 1, inner plate with 13–14 marginal setæ.

Pereiopods 1–3, side plates somewhat oval, Nos. 1–2 each with a small tooth on lower hind corner; side-plate of pereiopod 4 much broader, breadth nearly equal to depth. Pereiopod 1, 5th joint about $1^1/_3$ times the length of 6th joint; 6th joint oval, palm oblique, not defined from under edge; finger acute. Pereiopod 2 much stronger, 5th joint broad, 6th joint still broader, a little longer than 5th joint, with parallel edges; palm oblique, dentate, angular near finger hinge, defined by a tooth-like process; finger large, curved, acute. Pereiopods 3–4 have rather long hairs on 5th and 6th joints, fingers short. Pereiopods 5–7 increasing in length from prp. 5 to prp. 7; second joint large, oblong oval, hind margin finely serrate and in prp. 7 a little concave in lower half; lower hind corners sub-rectangular. Epimeral plate 1 rounded behind; No. 2 rounded, with a minute tooth on lower hind corner; No. 3 acutely produced.

Uropods 1 and 2 reaching equally far back. Uropod 1, peduncle has in the middle of underside a hump with a spine, and ends in a large dentiform process; the two rami equal in length, as long as peduncle. Urop. 2, outer ramus a trifle shorter than inner. Uropod 3 a little shorter than urop. 1, outer ramus over twice the length of peduncle, inner ramus very short. Telson half as long as peduncle of urop. 3, lobes acute, each half with a dorsal spine near apex.

This species is characterised by the combination of the following essentials: no eyes; metasome segments smooth, but one dorsal tooth on urosome segment 1, and two sub-dorsal teeth on urosome segment 2; a spine in the middle of underside of peduncle of uropod 1. Besides it is found at much greater d pth than any other species of the genus, except *M. richardi*.

One of the large ♀♀ had in marsupium a rhizocephalid(?) parasite, globular, about 4 mm in diameter.

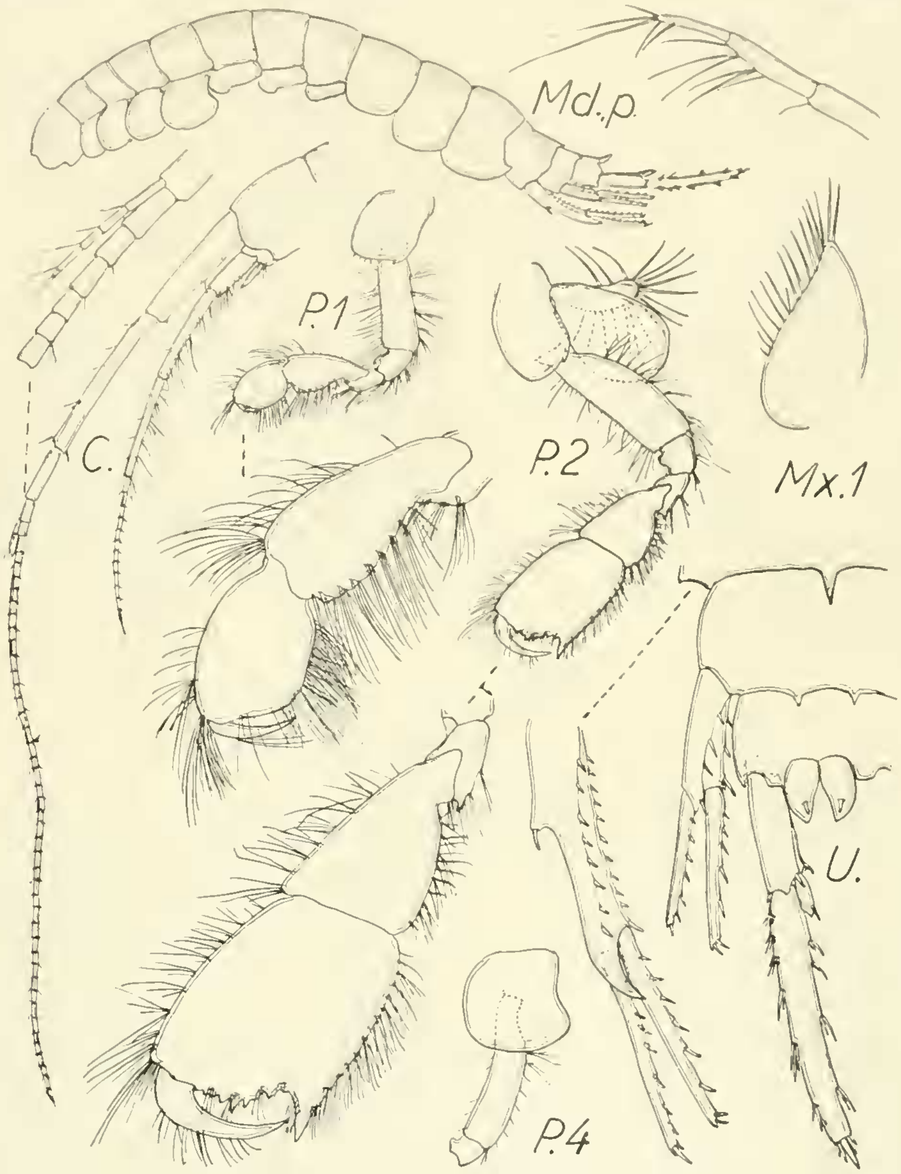

Fig. 13. *Melita abyssorum* ♀. *Mx.1* = inner plate of maxilla 1.

324. **Melita dentata** (Krøyer).

Melita dentata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 513, pl. 181 fig. 1.
Melita dentata Stebbing, Tierreich, vol. 1, 1906, p. 427.

Occurrence:
78°14′ N, 74°20′ W, 672 m, ÷ 0°5. "Godthaab" St. 99: 8-VIII-1928 (K. Stephensen, Meddel. om Grønl., vol. 79, No. 7, 1933, p. 43).

Distribution. Widely distributed in the northern Atlantic with adjacent arctic seas, etc., usually in the littoral-sublittoral zones. It has never before been recorded from depths so great as that cited above. For special localities, see K. STEPHENSEN, Tromso Mus. Skr., vol. 3, 1935–42, p. 307.

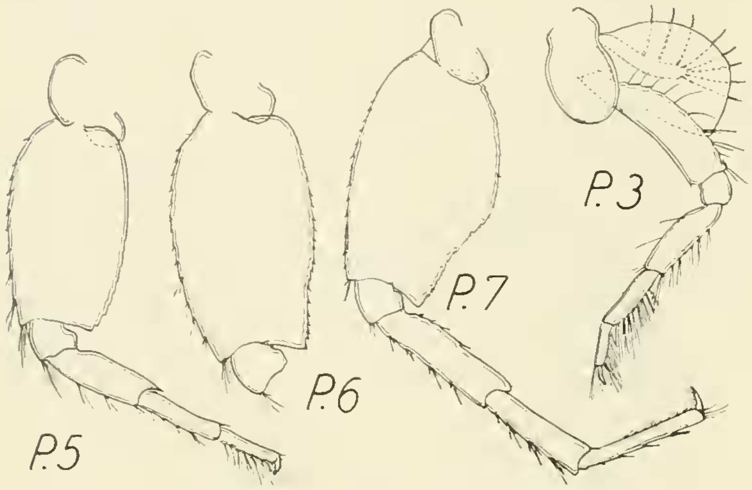

Fig. 14. *Melita abyssorum* ♀.

Genus: **Ceradocus** Costa.

Ceradocus Stebbing, Tierreich, vol. 21, 1906, p. 430.

325. **Ceradocus torelli** (Goës).

Ceradocus torelli Stebbing l. c., p. 432.
Ceradocus torelli Brüggen, Mem. Acad. Sci., St.-Pétersbourg, sér. 8, vol. 18, 1909, p. 38, pl. 1 fig. 4.
Ceradocus torelli K. Stephensen, Zool. of Iceland, vol. 3, No. 26, 1940, p. 54.

Occurrence:
West Greenland: Amerdlokfjord near Holsteinsborg, 350–500 m, numerous specimens (K. STEPHENSEN l. c.).

Distribution. From West Greenland (see above) to Bering or Okhotsk Sea, depths usually 24–240 m. An arctic species. For special localities see K. STEPHENSEN, Tromso Mus. Skr., vol. 3, 1935–42, p. 310.

326. **Ceradocus baffini** K. Stephensen.

Ceradocus baffini K. Stephensen, Meddel. om Grønl., vol. 79, No. 7, 1930, p. 43, figs.

Occurrence:
Baffin Bay 67°48′ N, 60°46′ W, 1600 m, temp. ?. "Godthaab" St. 162 (type-locality; K. STEPHENSEN l. c.).

Not found anywhere else.

Family: **Aoridæ** Stebbing.

Photidæ (in parte) G. O. Sars, Crust. of Norway, vol. 1, 1895, pp. 539–551 (not pp. 551–577).
Aoridæ Stebbing, Tierreich, vol. 21, 1906, p. 585.

Genus: **Aora** Krøyer.

327. **Aora typica** Krøyer.

Aora gracilis G. O. Sars l. c., p. 545, pl. 193.
Aora gracilis Stebbing l. c., p. 587.

Occurrence:
63°30′ N, 54°25′ W, 1096 m, 3°3. "Ingolf" St. 25: 26-VI-1895. 2 ♀, defective.

Hitherto it was not found at so great a depth, and it is not known from Greenland, Iceland, or the Faroes.

Distribution. Very widely distributed in nearly all seas except the Arctic and Antarctic areas, see CHEVREUX & FAGE, Faune de France, vol. 9, 1925, p. 293.

Genus: **Lembos** Bate.

Autonoë G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 540.
Lembos Stebbing, Tierreich, vol. 21, 1906, p. 594.

328. **Lembos (longidigitans** (Bonnier)?) (Fig. 15).

Autonoë longidigitans Bonnier, Ann. Univ. Lyon, 1896, p. 659, pl. 40 fig. 1.
Lembos longidigitans Stebbing l. c., p. 595.

Occurrence:
63°30′ N, 54°25′ W, 1096 m, 3°3. "Ingolf" St. 25: 26-VI-1895. 3 specimens about 4–6 mm.

Remarks. With some doubt I have referred these specimens to BONNIER's species, i. a. because of the absence of eyes, and the very long dactyli on pereiopods 3–4, almost as long as the preceding joints. All the specimens are probably ♂ (they have no marsupial plates).

But they do not agree entirely with BONNIER's description and figures; the disagreements are as follows: lateral lobes of head oval, projecting, not "not at all prominent". Antenna 1 (lost in BONNIER's specimen) about as long as mesosome + metasome; first joint in length equal to head, second joint a trifle longer, but more slender, and thrice as long as third joint; flagellum about twice the length of peduncle, with about 23 joints. Accessory flagellum 3-articulate. Antenna 2 (lost in BONNIER's specimen) half as long as antenna 1; the two distal joints of peduncle subequal in length, flagellum half as long as peduncle, with about 8 joints. Oral parts were not dissected out, but seem to agree with BONNIER's figures. Pereiopod 1 not as heavy as in BONNIER's fig. 11; second and 5th joints more slender, but hand and finger agree with BONNIER's specimen; there is a strong spine a little behind the tooth on the palm (not mentioned by BONNIER). Pereiopods 2–4 agree with BONNIER, but dactyli in prp. 3–4 a trifle shorter than the preceding joints, not "exactement de même longueur que le propodite"; prp. 3–4 are entirely alike; side-plate of prop. 4 almost quadrate. Prp. 5–7 have second joint much narrower than in BONNIER's figure (B. writes "les basipodites élargis et ovulaires"); dactylus in prp. 6 two thirds the length of metacarpus, in prp. 7 not half as long as metacarpus. Epimeral plates of metasome segments 1–3 rounded, in segment 3 not as protruding as in B.'s figure. Uropods 1–3 and telson seem (without dissection) to agree with BONNIER l. c.

Distribution. 44°17′ N, 4°38′ W, 950 m, mud (type-locality; BONNIER l. c.).

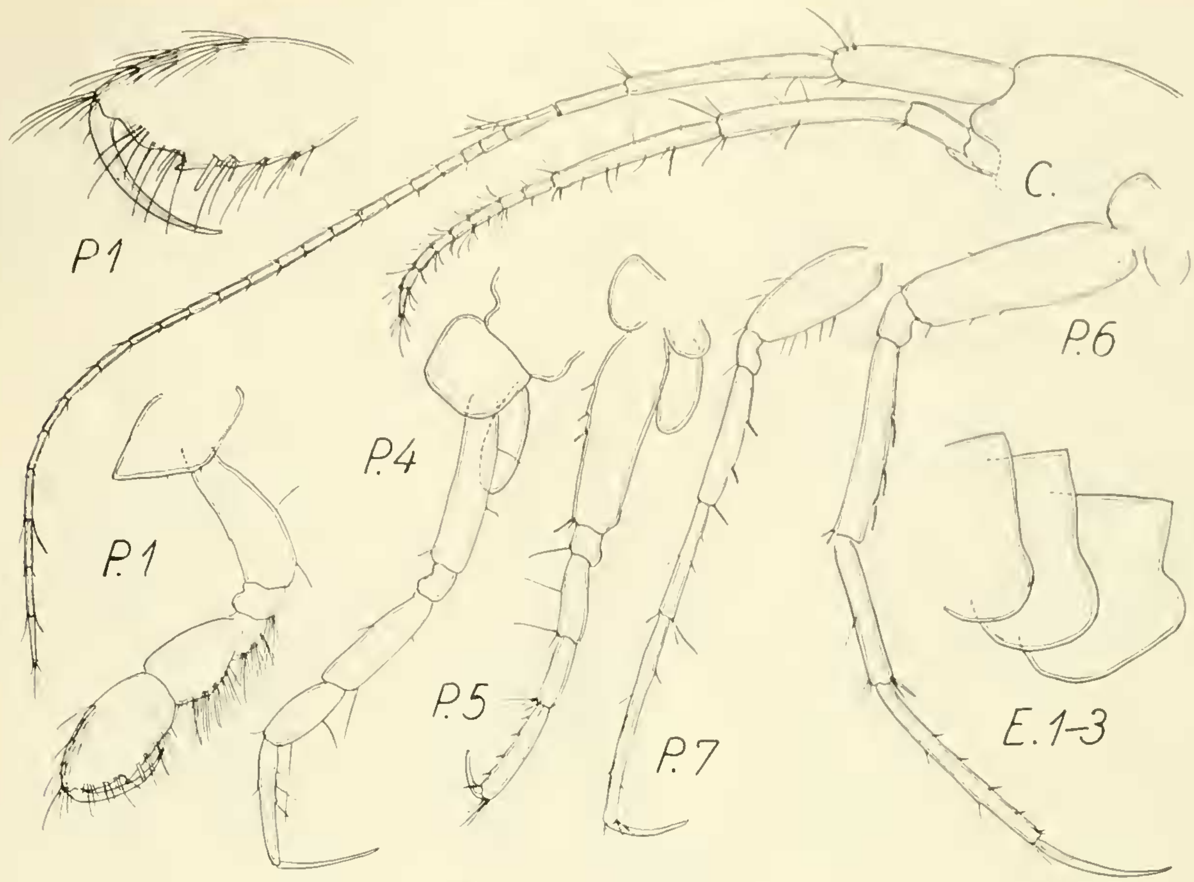

Fig. 15. *Lembos* (*longidigitans*?). Pereiopod 7 is from the small specimen.

Family: **Photidæ** Boeck.

Photidæ (in parte) G. O. Sars, Crust. of Norway, vol. 1, 1895, pp. 551–577 (non pp. 538–551).
Photidæ Stebbing, Tierreich, vol. 21, 1906, p. 603.

Genus: **Photis** Krøyer.

329. **Photis reinhardti** Kroyer.

Photis reinhardti G. O. Sars l. c., p. 569, pl. 202.
Photis reinhardti Stebbing l. c., p. 607.

Occurrence:
64°07′ N, 11°12′ W, 446 m, 2°5. "Ingolf" St. 4: 13-VI-1895. 1 ♂ juv.
65°16′ N, 55°42′ W, 791 m, 3°5. "Ingolf" St. 28: 1-VII-1895. 1 ♂.
64°44′ N, 32°52′ W, 1838 m, 1°4. "Ingolf" St. 92: 25-VI-1896. 1 ♂.

Though these specimens are secured at extraordinary great depth (– the usual depths are 10–100(200) m –), they agree well with Sars's figures.

Distribution. Widely distributed in the northern Atlantic with adjacent arctic waters, etc. For special localities see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 369.

Genus: **Eurystheus** Bate.

Gammaropsis G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 557.
Eurystheus Stebbing, Tierreich, vol. 21, 1906, p. 610.

330. **Eurystheus abyssalis** n. sp. (Fig. 16).

Occurrence:
61°15′ N, 9°55′ W, 900 m. "Thor" St. 99: 22-V-1904. 2 specimens (♂), about 6 mm.

Description of ♂, 6 mm (♀ unknown). Head as long as the two first segments combined, with lateral lobes acute, as in *E. melanops* (G. O. Sars l. c., pl. 199.1 C). Dorsal side of body rounded, not dentate, except on metasome segments 1–2 (see below). Eyes small, round, colourless. Antenna 1, second and third joints subequal in length; flagellum has > 8 joints (apex lost); accessory flagellum 4-articulate. Antenna 2 as long as mesosome; relative lengths of joints as in *E. melanops* (Sars l. c.); flagellum 11-articulate. Oral parts were not dissected out; epistome has no acute process. Pereiopod 1, side-plate oval, apically broader, 5th joint about $1^{1}/_{4}$ times as long as 6th joint which is ovate, with the slightly convex palm not defined from hind margin; dactylus in length $^{2}/_{3}$ of 6th joint. Pereiopod 2, side-plate as deep as the corresponding segment, with edges almost parallel, and corners evenly rounded; 6th joint twice as long as 5th, with edges almost parallel, palm oblique, with two truncate teeth separated by a rather deep notch; dactylus rather strong and curved. As regards pereiopods 3–4 nothing is noteworthy. Pereiopods 5–7, second joints very broad, broadest and oval in prp. 5, narrowest (length twice breadth) and with edges almost parallel in prp. 7; hind margins of second joints in prp. 5–7 denticulate, lower hind corners somewhat rectangular. Epimeral plate of metasome segment 1 rounded, in segment 2 rounded with a small tooth, in segment 3 with a larger tooth. Urosome segment 1 on hindmargin with one medio-dorsal tooth with a spine on either side, and one pair o

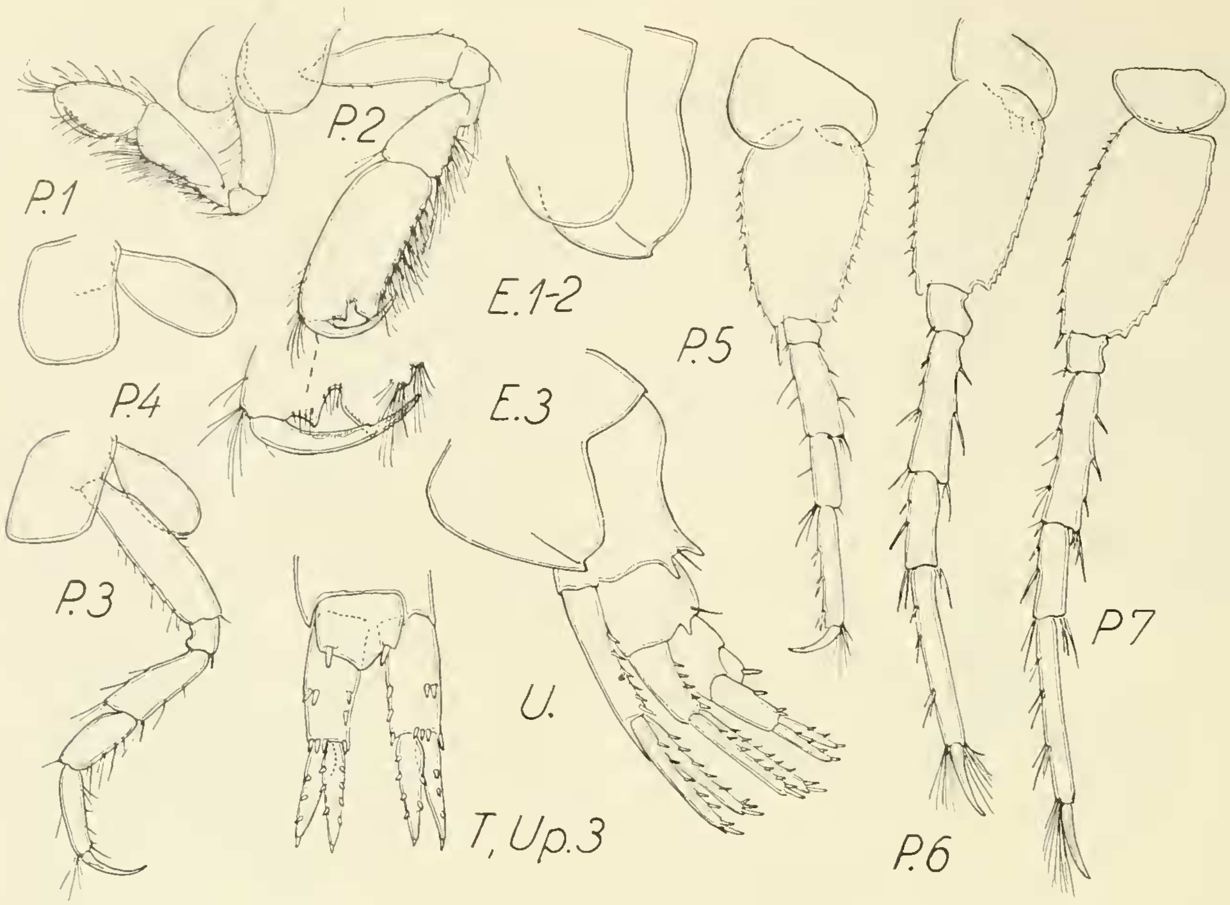

Fig. 16. *Eurystheus abyssalis* ♂.

dorso-lateral teeth; uros. segment 2 with one pair of medio-dorsal teeth and one pair of dorsal spines. Uropod 1, rami in length somewhat equal to peduncle. Uropod 2, rami somewhat longer than peduncle; inner ramus somewhat longer than outer. Uropod 3, rami in length nearly equal to peduncle, apically tapering. Telson about as broad as it is long, with edges almost parallel, but with apex triangular, and with a pair of dorsal spines, but no hairs.

Affinities. The present species is characterized mainly by the hand of pereiopod 2, and by the presence of teeth on the urosome segments, viz., 3 on segment 1 and 2 on segment 2.

A few species have pereiopod 2 not very different from the present species, but with urosome segments dorsally smooth. They are as follows:

E. eurypodii Barnard, Discovery Report, vol. 5, 1932, p. 231, fig. (Falklands). Differs in having defining angle of palm in pereiopod 2 minute crenulated and rounded.

?*E. scissimanus* Barnard, Ann. S. Afr. Mus., vol. 20, 1925, p. 361, pl. 34 fig. 15 (South Africa, 230 m).

Several other species have, like these, two teeth on palm of pereiopod 2 ♂, but shape and size of the two teeth are rather different from those of *E. abyssalis*.

The following species have dorsal teeth on urosome segments 1 and 2:

E. anomalus Chevreux, Bull. Soc. Zool. France, vol. 50, 1925, p. 381 (Senegal). 1 + 1 teeth[1]).

E. crassipes (Haswell) Stebbing, Tierwelt, vol. 21, 1906, p. 612 (East Australia). 3 + 0 teeth[1]).

E. dentatus (Chevreux). *Gammaropsis dentata* Chevreux, Rés. Camp. Sci. Monaco, vol. 16, 1900, p. 93, pl. 12 fig. 1 (Azores). 3 + 2 teeth.

E. dimorphus Barnard, Discovery Rep., vol. 5, 1932, p. 244, figs. (South Georgia). "Three to four denticles on hind margin of pleon segments 4 and 5 dorso-laterally".

E. holmesi Stebbing, Ann. S. Afr. Mus., vol. 6, 1908, p. 85, pl. 40A (South Africa). 3 + 2 teeth.

E. longitarsus Schellenberg, Further Results Swed. Antarct. Exped. 1901–1903 (O. Nordenskiöld, edit. by Sixten Bock), vol. 2, No. 6, Stockh. 1931, p. 242, figs. (Falkland Is.). 2 + 4 teeth.

E. lophomeria Barnard, John Murray Exped., vol. 4, No. 6, 1937, p. 166, figs. (South Arabian coast). 3 + 2 teeth.

E. ostroumowi (Sowinsky). Chevreux & Fage, Faune de France, vol. 9, 1925, p. 311, figs. (Mediterranean). 1 + 1 teeth.

E. semidentatus Barnard, Ann. S. Afr. Mus., vol. 15, 1916, p. 250, pl. 18 figs. 13–14 (South Africa). 3 + 2 teeth.

E. serrierus Barnard, Discovery Rep., vol. 5, 1932, p. 228, figs. (South Georgia and South Shetland). 2 + 2 teeth.

E. tenuicornis (Holmes). Shoemaker, Proc. U. S. Nat. Mus., vol. 78, art. 18, 1931, p. 5, figs. (California). 2 + 2 teeth.

E. thompsoni (Stebbing). *Gammaropsis t.* Stebbing, Challenger-Exped., vol. 29, 1888, p. 1103, pl. 115 (east of New Zealand, 2000 m?) (♂ not known) ♀: 1 (+ 2 small) + 0 teeth.

According to the above the following four species have the same number of dorsal teeth on the two anterior urosome segments, viz., 3 on segment 1, and 2 on segment 2; but in other essentials they are very different from *E. abyssalis*. The four species are:

E. dentatus: side-plate of pereiopod 1 dentate below; pereiopod 2 ♂: palm tridentate.

E. holmesi: pereiopod 2 most different; prp. 5: 5th joint broader, with deep incision in the middle of hind margin.

E. lophomeria: pereiopod 2 most different; prp. 7: second joint with strong teeth on fore margin.

E. semidentatus: pereiopod 2 most different; prp. 7: second joint with strong teeth on fore margin (in ♂).

[1]) 1 + 1 teeth = 1 tooth on urosome segment 1, 1 tooth on segment 2. – 3 + 0 teeth = 3 teeth on urosome segment 1, 0 on segment 2, etc.

Distribution. *E. abyssalis* is not found outside the locality recorded above, and as far as I am aware, it is found in greater depths than any other species of the genus.

Genus: **Bathyphotis** n. gen.

Head, lateral lobes moderately produced, post-antennal corner well marked. Side-plates 1–4 rather deep and broad, increasing in length from first to fourth, 5th with frontlobe short. Antennae 1–2 rather elongate, subequal in length; accessory flagellum well developed. Oral parts normal. Upper lip sub-symmetrical, distal margin rounded, with a median notch; lower lip with inner lobes and acute mandibular processes. Mandibles normal; palp 3-articulate, very long. Maxilla 1, inner plate naked(?), outer plate with 4 spines; palp two-jointed, with 3 heavy spines and 5 rather slender spines. Maxilla 2, outer plate the broader; both of the plates with numerous spines. Pereiopods 1–2 subchelate, pereiopod 2 in ♂ very stout. Pereiopods 6–7 longer than prp. 5. Gills short

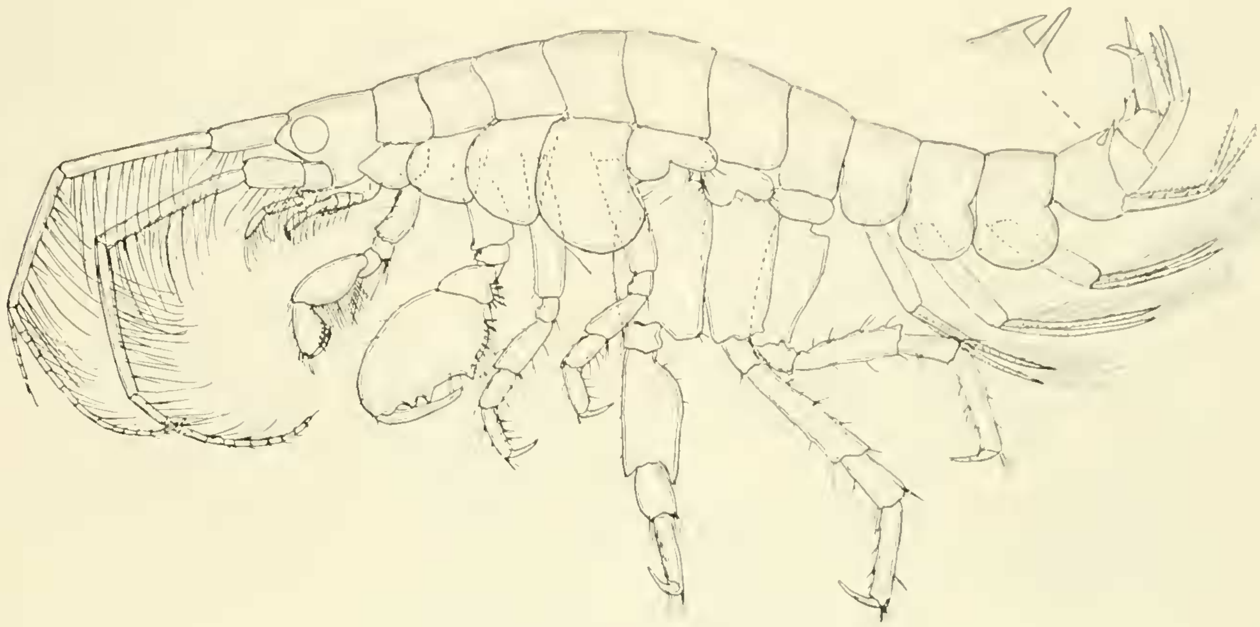

Fig. 17. *Bathyphotis tridentata* ♂.

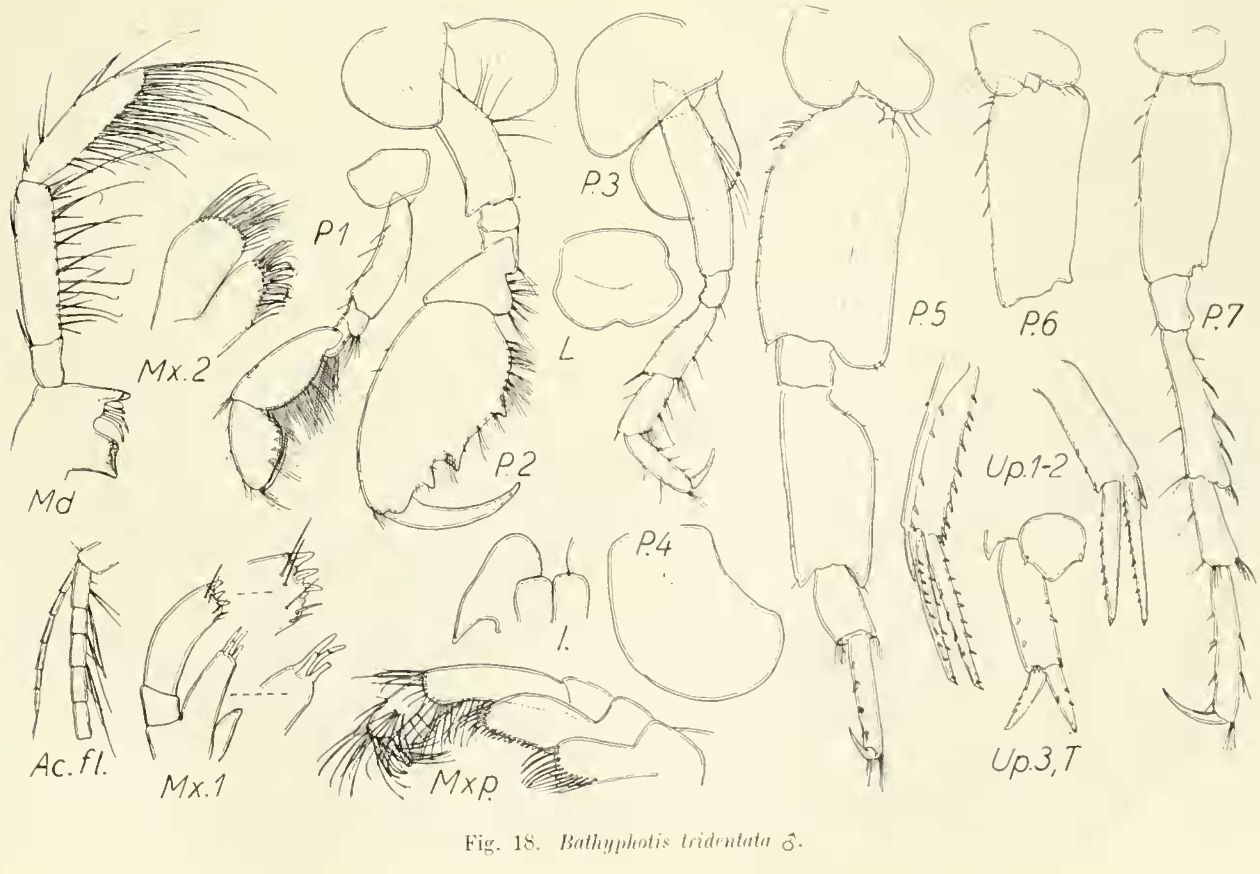

Fig. 18. *Bathyphotis tridentata* ♂.

and broad. Uropods 1–2 normal; uropod 3, rami narrow, acute, equal in length and breadth. Telson entire, sub-pentagonal, with apex triangular and somewhat projecting.

This genus is rather close to *Eurystheus*, but differs in having very few heavy spines on maxilla 1 (4 on outer plate, 3 on palp; *Eurystheus* has several spines); the very deep side-plate of pereiopod 4, and the very broad and almost circular gills (in *Eurystheus* they are narrow).

331. **Bathyphotis tridentata** n. sp. (Figs. 17–18).

Occurrence:
63°30′ N, 54°25′ W, 1096 m, 3°3. "Ingolf" St. 25: 26-VI-1895. 1 ♂.

Description of ♂, 10 mm in length (♀ is unknown). Body rather slender, with back evenly rounded (but there are teeth on urosomesegment 1, see below). Head about as long as the two first segments combined, lateral lobes rectangular. Eyes large, round, entirely colourless (in spirits). Antennæ 1–2 subequal in length, as long as head + mesosome. Antenna 1, the two distal joints of peduncle subequal in length, flagellum a little shorter than these two joints, 14-articulate; accessory flagellum has 7 joints including a minute apical joint. Antenna 2, the two distal joints of peduncle subequal in length; flagellum somewhat longer than ultimate joint, 11-articulate. Upper lip has no epistomal projection.

Pereiopod 1, side-plate has lower forecorner somewhat acute; 5th joint longer than 6th, broad, with hind margin convex; 6th joint not broader than 5th; palm smooth, oblique, and in length two thirds of hind margin; dactylus rather slender. Pereiopod 2, side-plate has length = breadth; foremargin evenly curved, hindmargin straight; second joint broad; 5th joint cup-shaped; 6th joint oval, very broad, in length = second to 5th joints combined; palm about half as long as 6th joint, with two teeth + a defining tooth; dactylus stout. Pereiopods 3–4 subequal in length: prp. 3, side-plate deeper than side-plate 2, foremargin evenly curved, hindmargin straight; side-plate 4 still deeper than side-plate 3, foremargin curved, hindmargin a little concave. Pereiopod 5 about $^2/_3$ times longer than prp. 3–4; side-plate with front lobe short; second joint broad, with hindmargin straight and lower hind corner rounded-quadrangular; fourth joint very broad, over half the breadth of second joint, with the edges almost parallel and lower hind corner projecting; 5th joint broad. Pereiopods 6–7 subequal both in shape and length, somewhat longer than prp. 5. Pereiopod 6, side-plate has a very short frontlobe; second joint rather large and lamellar, but much narrower than in prp. 5, with the edges almost parallel, and lower hind corner sub-rectangular; upper hind corner in second joint in prp. 6 rounded, in prp. 7 rectangular; the following joints not broad.

Epimeral plates of metasome, lower hind corners rounded. Urosome segment 1 has on hindmargin one medio-dorsal tooth and one pair of somewhat longer dorso-lateral teeth. Urosome segment 2 dorsally smooth. Uropod 1, rami subequal in length, and in length = peduncle, which ends in a spine. Uropod 2 rather similar to urop. 1, but shorter. Uropod 3, rami subequal in length, half as long as peduncle. Telson about as broad as it is long, terminating in a triangular projection, with one pair of dorsal spines.

Genus: **Bonnierella** Chevreux.

Bonnierella Chevreux, Rés. Camp. Sci. Monaco, vol. 16, 1900, p. 97.

332. **Bonnierella abyssi** (Chevreux).

Podoceropsis abyssi Chevreux, Bull. Soc. Zool. France, vol. 12, 1887, p. 577.
Bonnierella abyssi Chevreux, l. c. 1900, p. 97, pl. 11 fig. 3 (♂).
Podoceropsis abyssi (in parte) Stebbing, Tierreich, vol. 21, 1906, p. 619.
Podoceropsis abyssi Chevreux, Amphip., Travailleur et Talisman, 1927, p. 115, pl. 10 figs. 21–24 (♀).

Occurrence:
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 2 ♀ with marsupium, about 3 mm.

These specimens have lost antennæ and pereiopods 3–7; but the very characteristic pereiopods 2 agree excellently with Chevreux's figure (Chevreux 1927, pl. 10 fig. 22).

Stebbing (l. c.) considers it synonymous with *Gammaropsis abyssorum* Bonnier 1896; but though closely allied the two species are not identic (Chevreux 1927, p. 116).

Distribution. Near Cape Finisterre 43°12′50″(15″) N, 11°51′–11°53′30″ W. 363–510 m, mud (type-locality; Chevreux 1900). Arguin bank 21°53′ N, 19°50′ W, 655 m, greenish clayish sand (Chevreux 1927).

Genus: **Podoceropsis** Boeck.

333. **Podoceropsis nitida** (Stimpson).

Podoceropsis excavata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 576, pl. 205.
Podoceropsis nitida Stebbing, Tierreich, vol. 21, 1906, p. 620.
Podoceropsis nitida Chevreux & Fage, Faune de France, vol. 9 1925, p. 317, figs.

Occurrence:
63°06′ N, 56°00′ W, 2258 m, 2°4. "Ingolf" St. 24: 25-VI-1895. 2 young specimens (♂?), 2 mm.
60°07′ N, 3°42′ E, 360 m, 6°12. "Michael Sars" 1902, Ad. S. Jensen. 1 ♂.
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 1 ♂.
61°07′ N, 9°30′ W, 835 m. "Thor" St. 78: 12-V-1904. 3 ♂.
65°30′ N, 55°26′ W, 550 m, 4°5. Sand, stones. Wandel 1889. 1 ♀.

Remarks. The ♂ from the "Thor" and the "Michael Sars" are typical. The two small "Ingolf"-specimens (♂?; chelæ of pereiopod 2!) are somewhat defective (antennæ 1–2 and pereiopods 5–7 lost), but seem to agree well with Sars's figures, except that dactyli of pereiopods 3–4 are rather long, as long as 6th joint.

Distribution. Northern Atlantic, from northeastern U. S. A. to northern Norway and the English Channel, rarely deeper than 100 m. For special localities see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 373.

Genus: **Protomedeia** Krøyer.

334. **Protomedeia fasciata** Krøyer?.

Protomedeia fasciata, G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 552, pl. 196.
Protomedeia fasciata Stebbing, Tierreich, vol. 21, 1906, p. 623.
Protomedeia fasciata K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 376, figs.

Occurrence:
63°30′ N. 54°25′ N, 1096 m, 3°3. "Ingolf" St. 25: 26-VI-1895. 1 ♀ juv. (no marsupium), about 4 mm.

The determination is possibly not quite certain; but pereiopods 3–4 and uropod 3 seem to agree with Sars l. c.

Distribution. Widely distributed in the northern Atlantic with adjacent arctic seas in the littoral and sublittoral zones. For special localities, see K. Stephensen l. c.

Family: Jassidæ Stebbing.

Podoceridæ (in parte) G. O. Sars, Crust. of Norway, vol. 1, 1895, pp. 587–600 (not pp. 578–587 and 601–606).
Jassidæ Stebbing, Tierreich, vol. 21, 1906, p. 647.
Jassidæ Chevreux & Fage, Faune de France, vol. 9, 1925, p. 313.

Genus: Ischyrocerus Krøyer.

Ischyrocerus G. O. Sars, l. c., p. 587.
Ischyrocerus Stebbing, l. c., p. 657.

As the length of accessory flagellum is a rather important specific character, I give the length ratio of accessory flagellum and first joint of flagellum in all species of the genus, established up to 1940 (according to Zool. Record, including the volume for 1940).

I. anguipes Kr. (incl. *I. minutus* G. O. Sars), Stebbing, l. c. 1906, p. 658; 2:3.
I. assimilis (G. O. Sars), present paper p. 31, species no. 339; 1:3.
I. brevicornis (G. O. Sars), present paper p. 32, species no. 341; 1:1.
I. brusilovi Gurjanova, present paper p. 32, species no. 342; 1:2.
I. carinatus Barnard, Ann. S. Afr. Mus., vol. 15, 1916, p. 266, fig.; 1:2.
I. commensalis Chevreux, present paper p. 28, species no. 337; 1:1
I. cristatus Gurjanova, Rep. Japan Sea Hydrobiol. Exped. of the Zool. Inst. Acad. Sci. U.S.S.R. in 1934, pt. 1, 1938, pp. 366, 403, figs.; "accessory fla gellum 2-jointed", but length not noted.
I. elongatus Gurjanova, l. c. 1938, pp. 370, 404, figs.; "accessory flagellum 2-jointed", but length not noted.
I. enigmaticus Gurjanova, Zool. Anz., vol. 108, 1934, p. 128, fig.; 1:1.
I. gorgoniæ Barnard, Ann. S. Afr. Mus., vol, 32, 1940, p. 481, fig.; I have not had access to this paper.
I. hanseni n. sp., present paper p. 28, species no. 336; 1:1.
I. hocki (Stebbing), ? = *I. brusilovi* (see above).
I. latipes Krøyer, Stebbing l. c. 1906, p. 660; 1:2.
I. megacheir (Boeck), present paper p. 29, species no. 338; 1:1 or > 1:1.
I. megalops G. O. Sars, present paper p. 32, species no. 340; 1:3.
I. minutus G. O. Sars, see *I. anguipes* (above).
I. nanoides (H. J. Hansen), present paper p. 27 species no. 335; 1:2.
I. pachtusovi Gurjanova, Zool. Anz., vol. 103, 1933, p. 126, and Explor. mers U.R.S.S., vol. 21, 1935, p. 77, figs.; accessory flagellum not described.
I. parvus Stout, Zool. Jahrb., Syst., 1913, p. 657, no figs.; "accessory flagellum two-jointed", but length not noted.
I. rhodomela Gurjanova, l. c. 1938, pp. 372, 101, figs.; "accessory flagellum quite rudimentary".
I. serratus Gurjanova, l. c. 1938, pp. 368, 403, figs.; 1:2.
I. spitzbergensis Schellenberg, see *I. megacheir* (above); 1:1 or > 1:1.
I. tenuicornis (G. O. Sars), Stebbing, l. c. 1906, p. 660; 1:2.
I. tuberculatus (Hoek), ? = *I. brusilovi* (see above); < 1:2.

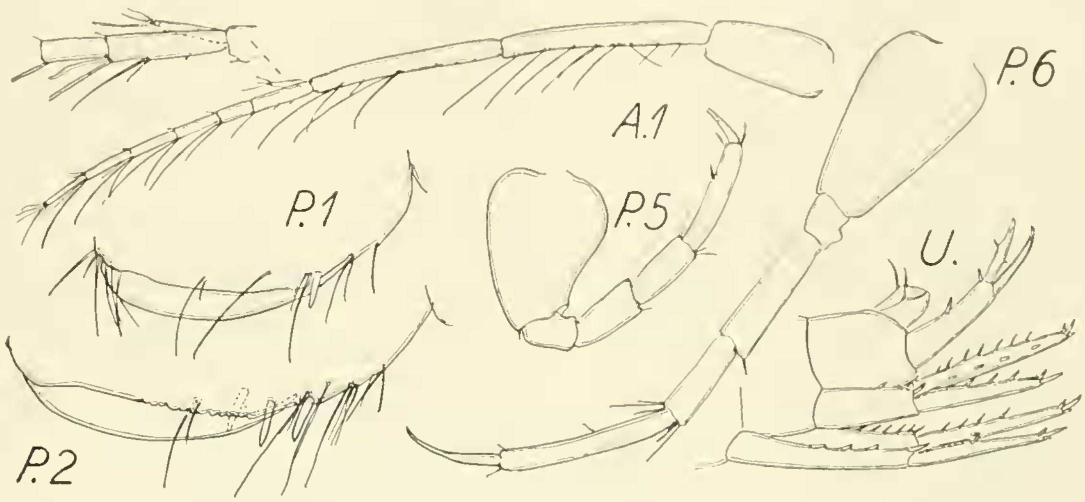

Fig. 19. *Ischyrocerus nanoides* ♀, one of Hansen's type specimens.

335. Ischyrocerus nanoides (H. J. Hansen) (Fig. 19).

Podocerus nanoides H. J. Hansen, Vid. Medd. 1887, p. 162, pl. 6 figs. 4–4 b.
Ischyrocerus nanoides Stebbing, Tierreich, vol. 21, 1906, p. 657.
Ischyrocerus nanoides Schellenberg, Mitt. Zool. Mus. Berlin, vol. 11, 1925, p. 209.

Occurrence:

61°41′ N, 27°00′ W, 913 m, 6°1. "Ingolf" St. 81: 11-VI-1896. 1 specimen (sex?), 3 mm, very defective, and the determination therefore not certain. Antennæ 1–2 and pereiopods 5–7 are lost, but uropod 3 is of the typical form.

Remarks. In the Zoological Museum, Copenhagen, we have one of H. J. Hansen's two type specimens, a ♀ 4 mm. I have dissected out some of the appendages and compared them with Hansen's description and figures. On the whole they agree well with H. l. c., but some additions should be made (H. had only very few figures, viz., a specimen in lateral view, pereiopod 2, and urosome + epimeral plate 3). Antenna 1, flagellum has 6 (not 7–8) joints; accessory flagellum half as long as first joint in flagellum, not longer than first joint (H. J. Hansen writes: "articulo primo flagelli longius"). Palm in pereiopod 1 defined by two spines, in pereiopod 2 defined by three spines (Hansen: (prp. 1–2) "ad apicem posteriorem spinis duabus minoribus armata"). Pereiopod 5, second joint pearshaped-oval, broader than in prp. 6; prp. 7 lost. Uropod 3, peduncle has probably but two spines; inner ramus has one spine near the middle.

It will be seen that this specimen differs from H. J. Hansen

l. c. mainly in the accessory flagellum being not longer than first joint of flagellum, but only half as long,

A male, 5.5 mm, was described by SCHELLENBERG l. c., but without figures.

Distribution. Baffin Bay 71°10′ N, 58°56′ W, 400 m, clay (type-locality; H. J. HANSEN l. c.). West Greenland 66°35′ N, 55°54′ N, 166 m, 1°6 ("Ingolf" St. 31: 11-VII-1895), 1 ovigerous ♀ 4 mm, defective (antenna 1 and pereiopods 5–7 lost, but uropod 3 typical). North of Spitsbergen 81°20′ N, 19° E, 1000 m (SCHELLENBERG l. c.).

Two specimens from 78°15′5 N, 73°29′ W, 290 m, with some doubt referred to this species by K. STEPHENSEN 1933, p. 49 (Meddel. om Grønl., vol. 79, no. 7), belong in reality to *I. brusilovi* Gurj. (see below, p. 33).

336. Ischyrocerus hanseni n. sp. (Fig. 20).

Occurrence:
64°24′ N, 28°50′ W, 1484 m, 3°5. "Ingolf" St. 10: 20-V-1895. 1♂(?).

Description of ♂(?), 2.5 mm (♀ unknown). On the body nothing is noteworthy. Head a trifle longer than the two first segments combined, or as long as first joint of antenna 1; lateral lobes very acute; no eyes. Antenna 1 as long as head + mesosome; second and third joints subequal in length; flagellum longer than third joint, 6-articulate, third joint longer than the others; accessory flagellum about as long as first joint of flagellum, 1-articulate. Antenna 2 lost. Pereiopod 1, side-plate with lower forecorner rounded rectangular; 6th joint oblong oval; palm not well defined from hind edge, near finger hinge concave, then follows a triangular tooth; finger long, slender, smooth. Pereiopod 2 longer than prp. 1; 6th joint oval, with finger closing up on inner surface; palm near finger hinge with a triangular process, then follows a notch; palm defined by three spines on inner side of hand. Pereiopods 3–4 rather slender. Pereiopods 5–6 (7 is lost) increasing in length, with second joints very narrow, over twice as long as they are broad, and fingers long. Epimeral plate 3, lower hind corner rounded. Uropod 1, rami equal in length and a trifle shorter than peduncle; outer ramus naked, inner ramus with a spine near the middle. Uropod 2, inner ramus as long as peduncle, outer ramus shorter; both rami have each a spine near the middle. Uropod 3, inner ramus a trifle shorter than peduncle, outer ramus shorter than inner; both rami straight and naked Telson acute, with a pair of dorsal setæ.

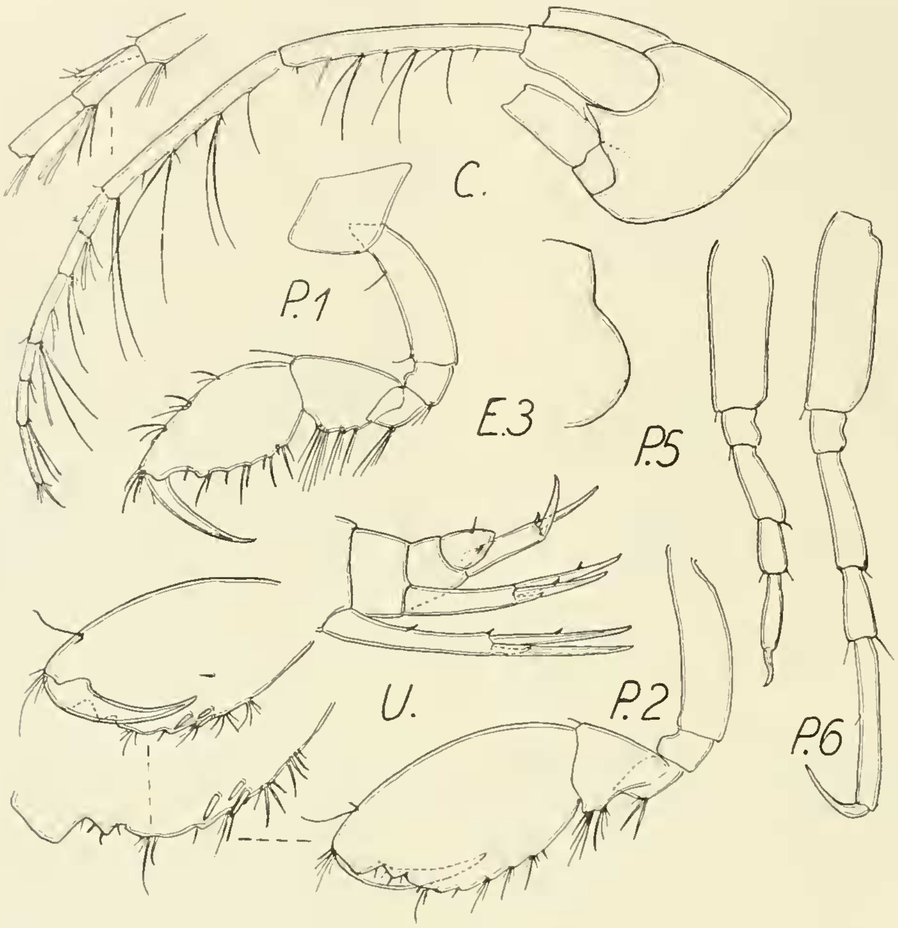

Fig. 20. *Ischyrocerus hanseni.*

This species is well characterized by the long accessory flagellum, the shape of pereiopods 1–2, the narrow second joints of pereiopods 5–6 (and 7?), the almost naked uropods 1–2, and the very long naked rami of uropod 3.

The specific name was chosen in honour of the carcinologist H. J. HANSEN, who found the species.

337. Ischyrocerus commensalis Chevreux.

Ischyrocerus commensalis Chevreux, Rés. Camp. Sci. Monaco, vol. 16, 1900, p. 104, pl. 12 fig. 2.

Ischyrocerus commensalis Shoemaker, Contrib. Canad. Biol. and Fish., n. ser., vol. 5, 1929–30, p. 126, figs.

Occurrence:
65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. A few specimens, more or less defective.

Distribution. West Greenland 65°17′ N, 54°17′ W, 104 m, "Ingolf" St. 34, 18-VII-1895, from *Boltenia*, several specimens (♂,

♀). Off Cheticamp Island, Gulf of St. Lawrence, 3 hauls 40–75 m (SHOEMAKER l. c.). Jugor Strait, depth not noted (GURJANOVA, Zoogeographica, vol. 2, 1935, p. 558). Off St. John's, New Foundland, 47°33′ N, 53°28′ W, 150 m (type-locality; CHEVREUX l. c.).

61°17′ N, 31°33′ W, 1171 m, 3°0. "Ingolf" St. 13: 22-V-1895. 1 specimen.

66°18′ N, 25°29′ W, 621 m, ÷0°75. "Ingolf" St. 15: 1-VI-1895. About 20 specimens.

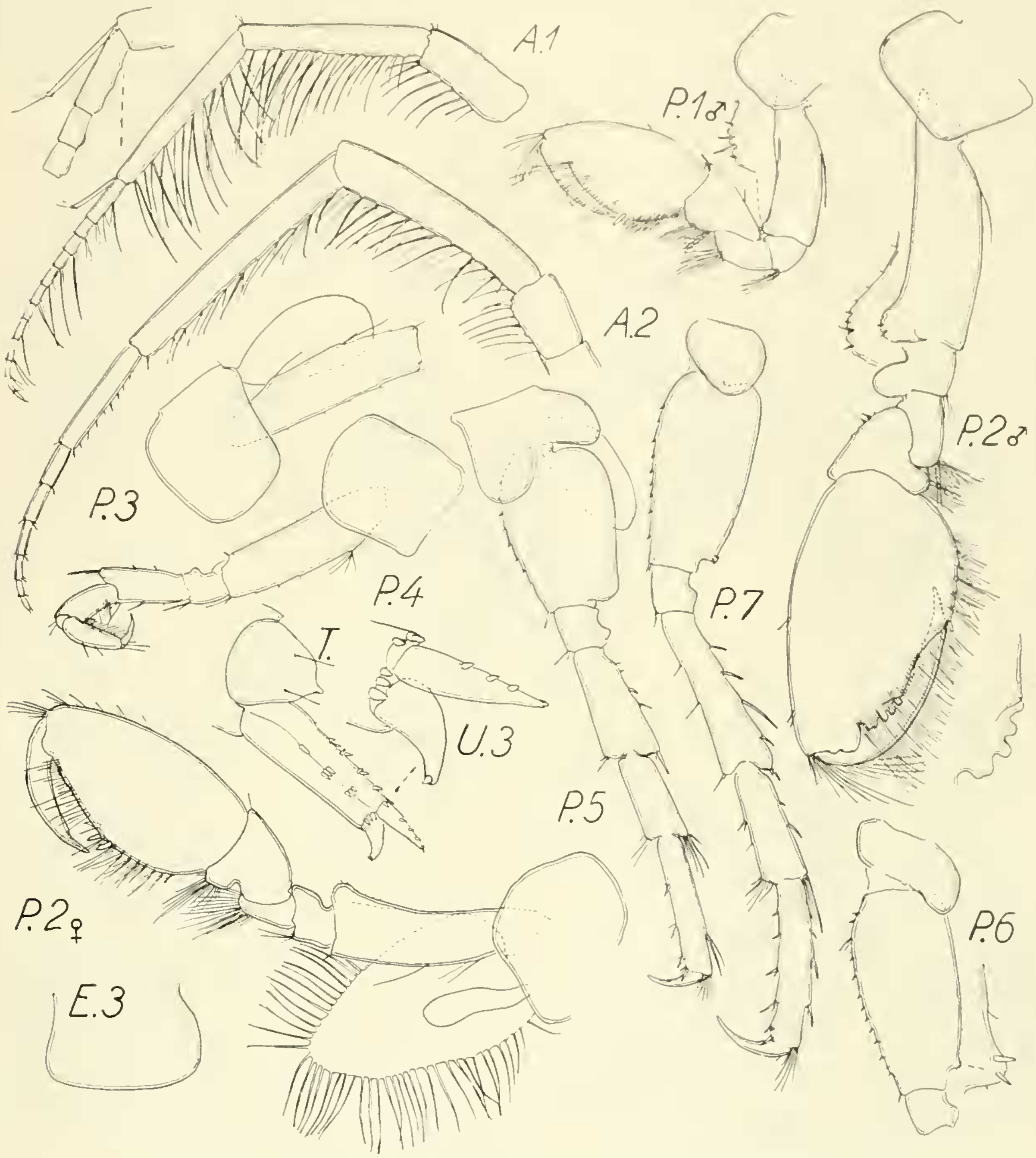

Fig. 21. *Ischyrocerus megacheir.* ♂ 14 mm, and pereiopod 2 of ♀ 12 mm. "Ingolf" St. 15.

338. **Ischyrocerus megacheir** (Boeck) (Fig. 21; Chart III).

Ischyrocerus megacheir G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 592, pl. 211.

Ischyrocerus megacheir Stebbing, Tierreich, vol. 21, 1906, p. 659.

Ischyrocerus spitzbergensis Schellenberg, Mitt. Zool. Mus. Berlin, vol. 11, 1924, p. 209, figs.

Occurrence:

63°04′ N, 9°22′ W, 495 m, 5°3. "Ingolf" St. 2: 12-V-1895. A few specimens, determination not certain.

64°07′ N, 11°12′ W, 446 m, 2°5. "Ingolf" St. 4: 13-V-1895. About 15 specimens (♂, ♀).

63°30′ N, 54°25′ W, 1096 m, 3°3. "Ingolf" St. 25: 26-VI-1895. A few specimens, partly very defective.

64°54′ N, 55°10′ W, 740 m, 3°8. "Ingolf" St. 27: 1-VII-1895. A few specimens.

65°14′ N, 55°42′ W, 791 m, 3°5. "Ingolf" St. 28: 1-VII-1895. 1 ovigerous ♀ 9 mm, 2 smaller specimens.

66°35′ N, 56°58′ W, 599 m, 3°9. "Ingolf" St. 32: 11-VII-1895. 3 specimens up to 6 mm.

65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. Numerous specimens up to 8 mm.

61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895. Numerous specimens.

60°37′ N, 27°52′ W, 1505 m, 4°5. "Ingolf" St. 78: 13-VI-1896. 1 specimen.
65°14′ N, 30°39′ W, 1416 m, 2°1. "Ingolf" St. 95: 27-VI-1896. About 10 specimens.
62°58′ N, 7°09′ W, 731 m, ÷ 0°4. "Ingolf" St. 143: 11-VII-1896. About 10 specimens.

than in Sars's fig.; also pereiopods 6–7 are heavier than in Sars's fig. Epimeral plate 3, lower hind corner rounded, not rectangular. Uropods 1–2, spinose armature rather similar to that of *I. assimilis* (fig. 22); uropod 3, inner ramus has on the upper edge 3 spines, not one. Telson triangular, acute, length = breadth.

♀ with marsupium, 12 mm: Antenna 1, flagellum 11-ar-

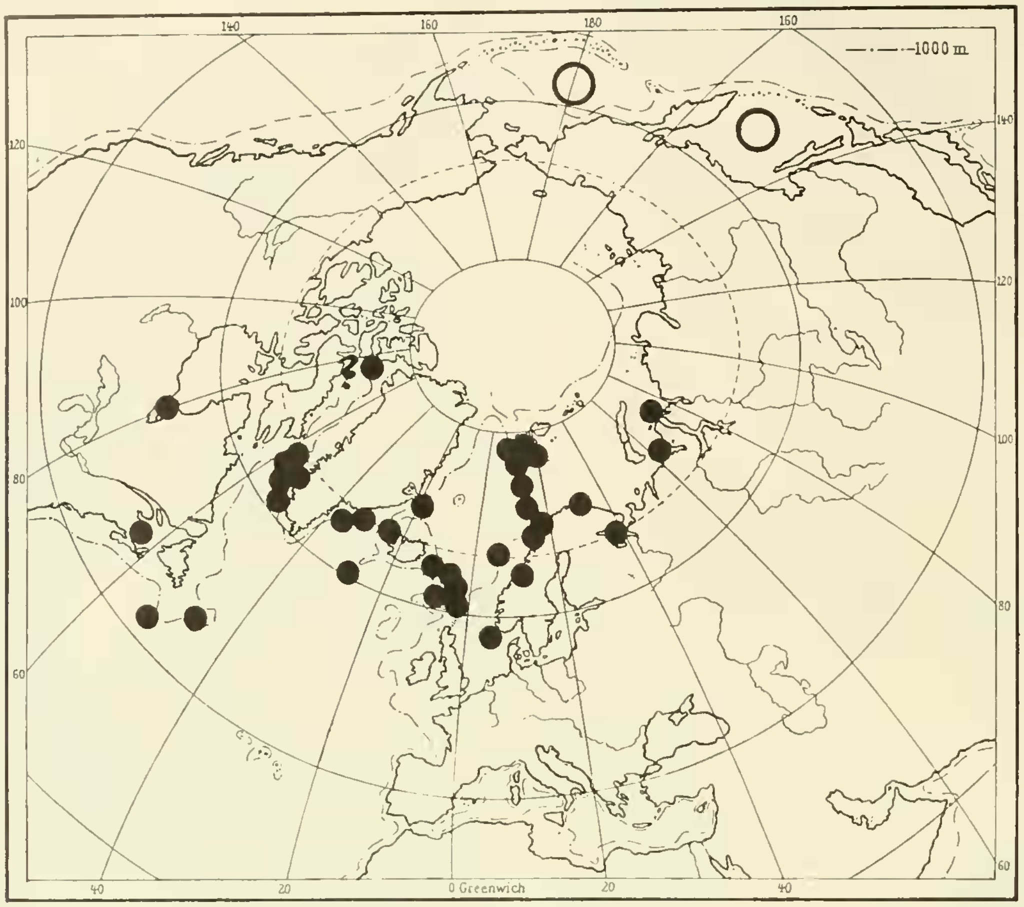

Chart III. Distribution of *Ischyrocerus megacheir*. The rings indicate localities which could not be noted exactly.

62°53′ N, 9°06′ W, 575 m. "Michael Sars" 20-VIII-1902, Ad. S. Jensen. 3 specimens.
60°19′ N, 5°22′ W, 1200 m, ÷ 0°15. "Michael Sars" 10-VIII-1902, Ad. S. Jensen. About 15 specimens.
66°16′ N, 26°8′ W, 600 m, ÷ 0°1. Wandel 1891. A few specimens.
63°15′ N, 9°35′ W, 510 m. Wandel 1891. 1 specimen 9 mm.
61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. A few specimens incl. ovigerous ♀, but determination not certain, for antenna 1 (and several other limbs) are lost.

Remarks. Accessory flagellum has a minute apical joint and is rather long, as long as or a trifle longer than the long first joint in flagellum.

G. O. Sars (1895) writes: "length of adult female 7, of male 8 mm. Maximum length of Arctic specimens 12 mm". In the "Ingolf" collection there are, however, specimens of lengths up to 14 mm. I have dissected two of these large specimens (♂ and ♀; "Ingolf" St. 15) and give drawings (Fig. 21) of some of the limbs. They agree fairly well with Sars l. c., but there are some differences, probably due to difference in size.

♂, 14 mm. Antenna 1, flagellum has 12 (not 10) joints. Pereiopod 2, the distal portion of the palm has 4 teeth (Sars writes that it has an "irregularly crenulated prominence"); the inner (median) side of the hand is rather concave as in *I. assimilis*. Pereiopod 5 not very slender, second joint suboval, a trifle broader

ticulate; antenna 2, flagellum 8-articulate, first joint shorter than in ♂. Pereiopod 1 as in ♂. Pereiopod 2 not essentially different from pereiopod 1, but larger. The other limbs not different from ♂.

The oral parts of these large specimens were not dissected out.

I. spitzbergensis Schellenberg is probably this species; it agrees with the large "Ingolf"-specimens described above, except in the setose armature of telson, and the eyes are said to be black. Also in some of the "Ingolf"-specimens there are traces of black pigment in the eyes.

In my paper 1935–42, p. 398, I have considered *I. spitzbergensis* "possibly synonymous with *I. assimilis*", because of the rounded hind corner of epimeral plate 3 (cf. the key in Stebbing 1906, p. 657, § 5). But this corner seems to be of varying shape (square or rounded) in both *I. megacheir* and *I. assimilis*. In other, more constant specific characters the agreement of *I. spitzbergensis* and *I. megacheir* is very close; viz., the long accessory flagellum, and outer ramus of uropod 3 not being hooked.

Distribution (Chart III). Widely distributed in the northern Atlantic with adjacent seas, from East of America 43° N and the Skagerrak, to(?) Baffin Bay, Spitsbergen and Bering or Okhotsk Sea, depths (20)80–1400 m, ÷ 1°4–6°5. For special localities, see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 396, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 65. Additional localities:

Jugor Strait (GURJANOVA, Zoogeographica, vol. 2, 1935, p. 558), and Kara Sea 74°35′ N, 75°26′ E, 32 m (GURJANOVA, Explor. Mers U.R.S.S., vol. 21, 1935, p. 77).

339. **Ischyrocerus assimilis** (G. O Sars) (Figs 22–23).

Podocerus assimilis G. O. Sars, Crust., vol. 1: Norske Nordhavs-Exp., 1885, p 205, pl. 17 fig. 1.
Ischyrocerus assimilis Stebbing, Tierreich, vol. 21, 1906, p. 659.

Occurrence:
61°12′ N, 9°36′ W, 1026 m, 4°8 "Ingolf" St. 44: 14-VIII-1895. 2 ♀.
60°19′ N, 5°22′ W, about 1200 m, ÷ 0°2. "Michael Sars" 10-VIII-1902. AD. S. JENSEN leg. A few specimens.
66°16′ N, 25°20′ W, 550 m. ÷ 0°2. WANDEL leg. 1891. 1 ♀.
66°16′ N, 26°08′ W, 600 m. ÷ 0°1. WANDEL leg. 1891. ♀ with marsupium, 11 mm.

Remarks. The largest ♂, about 9 mm, differs from SARS l. c. in the following characters. Eyes small, but not very small, and they are round, not oval; ocels distinct, but colourless (SARS: dark brown). Antenna 1 as long as head + mesosome, antenna 2 about as long as head + mesosome + metasome (SARS: "the antennæ are ... well-nigh equal in size, appreciably exceeding half the body in length"). Antenna 1, flagellum has 10 joints (SARS: 9), accessory flagellum 1-articulate and very short, about one third of the length of first joint in flagellum, as described by SARS. Antenna 2, flagellum has 7 (not 8) joints, and first joint in length about two thirds of the other joints together. Pereiopod 1 differs a little from SARS l. c.; palm not evenly curved, but divided into a straight (distal) and a concave (proximal) portion, posteriorly defined by two spines; dactylus which is minutely serrate, has its apex closing upon inner surface of hand. Pereiopod 2 much larger and heavier than pereiopod 1; it agrees well with SARS

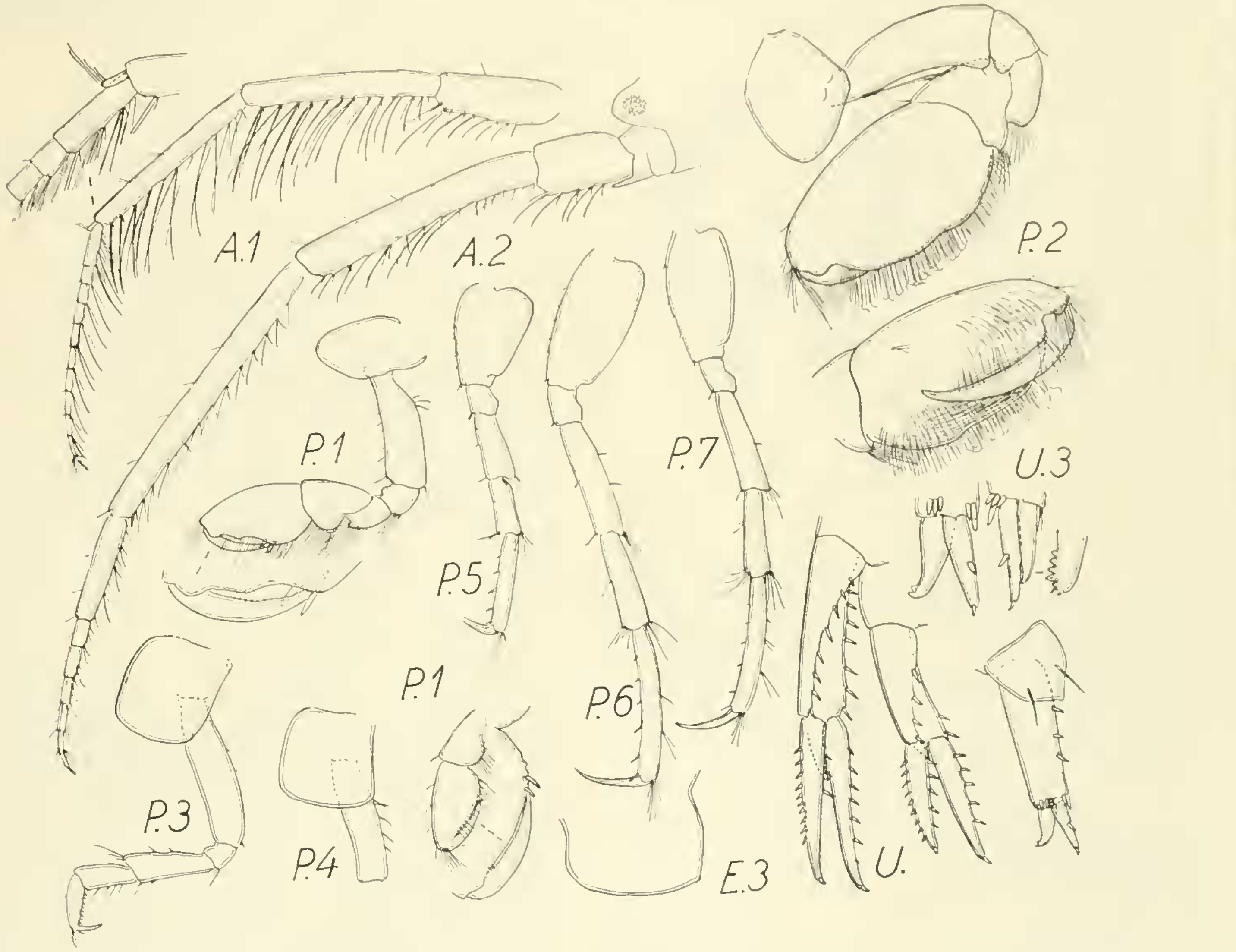

Fig. 22. *Ischyrocerus assimilis* ♂. The detail figure of *P.1* was taken from another specimen.

l. c., but 6th joint (hand) is broader. SARS writes that 6th joint is tumid; in the "Ingolf" specimen the upper (anterior) part of outer side is somewhat concave, while the lower (posterior) part is convex; lower part of inner side is most concave. As regards pereiopods 3–4 nothing is noteworthy; but their side-plates have forecorners rounded rectangular, not somewhat projecting as in SARS's figure. SARS writes that pereiopods 5–7 "are somewhat robust, with the basal joint lamelliform dilated". If SARS's figure is quite correct, second joint of pereiopod 5 is proximally broader in the present specimen; but second joint of pereiopods 6–7 agrees with SARS's figure, in that this joint has margins almost parallel, and length about twice the breadth. Epimeral plate 3 has hind corner rectangular, not obtusely rounded. Uropods 1–2 have the usual shape, spinose; uropod 3, peduncle about three times as long as rami; inner ramus has one central and one apical spine, outer ramus terminates in two small recurved spines (in left uropod 3), or in four deminutive teeth (in right uropod 3). Telson has one pair of dorsal setæ.

These differences from SARS's specimens are probably due to different size and age; the specimen described above is probably an adult ♂ (9 mm), while SARS's description was based on a specimen a trifle smaller (8 mm) and probably not quite mature.

Two other ♂♂ which are in length equal to SARS's specimen, have pereiopod 1 shaped as in SARS's figure, with palm evenly curved and with also pereiopod 2 agreeing with SARS.

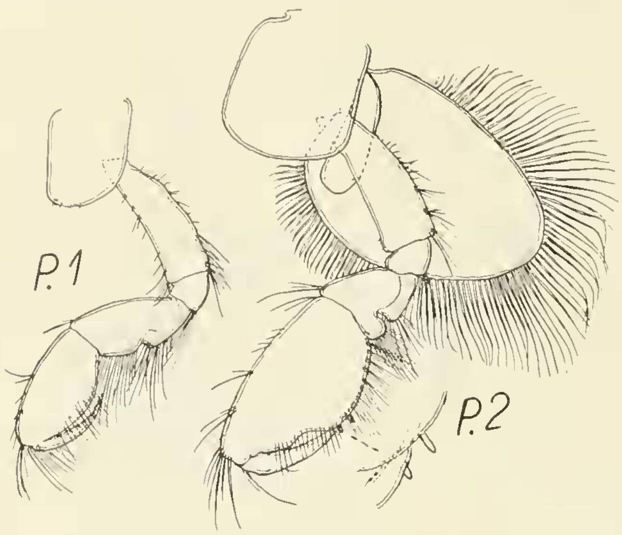

Fig. 23. *Ischyrocerus assimilis* ♂.

♀ with marsupium, 8 mm, differs from the large ♂ in but few characters: flagellum in antenna 1 has 8 (not 10) joints (but flagellum in antenna 2 has 6–7 joints in both sexes). Pereiopod 1 has palm evenly curved as in SARS's figure, but pereiopod 2 has palm divided into two portions as in pereiopod 1 ♂.

Distribution. The deep Arctic Basin 827 m, ÷ 1°0; South of Bear Island, 64 m, + 1°1; North of Spitsbergen, 1000 m; Hudson Bay; for references see K. STEPHENSEN 1935–42, p. 398.

340. **Ischyrocerus megalops** G. O. Sars.

Ischyrocerus megalops G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 591, pl. 210 fig. 2.
Ischyrocerus megalops Stebbing, Tierreich, vol. 21, 1906, p. 660.

Occurrence:
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 9-VIII-1895. 10 specimens.

Distribution. Northern Norway $65^1/_2$°–70° N, 1–75 m; eastern Spitsbergen 60 m. For special localities see K. STEPHENSEN, Tromsø Mus. Skr., vol. 3, 1935–42, p. 398.

341. **Ischyrocerus brevicornis** (G. O. Sars).

Podocerus brevicornis G. O. Sars, Crust., vol. 1; Norske Nordhavs-Exp., 1885, p. 207, pl. 17 fig. 2.
Ischyrocerus brevicornis Stebbing, Tierreich, vol. 21, 1906, p. 661.

Occurrence:
66°23′ N, 12°05′ W, 1011 m, ÷ 0°7. "Ingolf" St. 101: 10-VII-1896. 1 ♀ with marsupium, 6.5 mm.
67°19′ N, 15°52′ W, 552 m, ÷ 0°5. "Ingolf" St. 126: 29-VII-1896. 1 specimen, no marsupium, 6 mm.
62°30′ N, 1°56′ W, 500–550 m, ÷ 1°17. "Michael Sars", AD. S. JENSEN leg. 1 specimen, no marsupium, 5 mm.
62°40′ N, 1°56′ W, 700 m, ÷ 0°3. "Michael Sars", AD. S. JENSEN leg. 1 specimen, no marsupium, 5 mm.
60°19′ N, 5°22′ W, c. 1200 m, ÷ 0°15. "Michael Sars" 10-VIII-1902, AD. S. JENSEN leg. 1 specimen, no marsupium, 5 mm.

Remarks. Accessory flagellum is (as in SARS's fig. 2a) only half as long as first joint of the primary flagellum, but SARS's text says "almost as long as 1st joint of flagellum".

Distribution. From East Greenland and Arctic Polar Basin to eastern Barents Sea, possibly to Kara Sea, 160–1400 m, negative temperatures. For special localities, see K. STEPHENSEN, Tromsø Mus. Skr., vol. 3, 1935–42, p. 399.

342. **Ischyrocerus brusilovi** Gurjanova (Fig. 24).

Ischyrocerus brusilovi Gurjanova, Zool. Anzeiger, vol. 103, 1933, p. 126, no figs. (♂, ♀).
Ischyrocerus brusilovi Gurjanova, Explor. des mers de l'U. R. S. S., vol. 21, 1935, p. 78 (Russian), figs. (♂, ♀).
Probably synonymous with:
Podocerus hoeki Stebbing, Amphip. "Challenger", 1888, p. 1136, pl. 120 (♂, ♀), which is, according to STEBBING 1894 (see below), synonymous with
Podocerus tuberculatus Hoek, Niederl. Arch. f. Zool., Suppl.-bd. 1, 1882, Crust., p. 64, pl. 3 fig. 32 (♂).
Podocerus tuberculatus Stebbing, Bijdragen Dierkunde, Amsterdam, vol. 17, 1894, p. 45 (sex not noted).
Ischyrocerus tuberculatus Stebbing, Tierreich, vol. 21, 1906, p. 661.
Ischyrocerus tuberculatus K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 400, with reproduction of HOEK's fig. (♂).

Occurrence:
65°34′ N, 7°31′ W, 1435 m, ÷ 0°8. "Ingolf" St. 105: 11-VII-1896. 3 ♂ 5–8 mm (and ? 3 smaller specimens).
70°05′ N, 8°26′ W, 699 m, ÷ 0°4. "Ingolf" St. 116: 23-VII-1896. 1 ♂ about 6 mm, 2 small specimens.

Remarks. The largest ♂ (8 mm; "Ingolf" St. 105) agrees fairly well with GURJANOVA's description and figures af *I. brusilovi*, but differs in a few small details, and some additions should be made. Antenna 1, first joint of peduncle in length two thirds of second joint, or two thirds of the head measured from hind margin to apex of lateral lobe (GURJANOVA: "kürzer als der Kopf"); third joint in length = second joint; flagellum 7-articulate (GURJANOVA: 8-articulate). Accessory flagellum a trifle over half the length of first joint of flagellum (not mentioned or drawn by GURJANOVA). Antenna 2 much heavier than antenna 1; the two distal joints of peduncle equal in length; flagellum a trifle shorter than ultimate joint of peduncle, 5-articulate, first joint nearly as long as the following joints combined (in GURJANOVA's figure not much longer than the other joints). Pereiopod 1, denticles on palm extremely small; palm defined by two spines. Pereiopod 2, the knots on palm somewhat smaller than shown in GURJANOVA's figure; the knot close to finger hinge has a small apical notch; dactylus smooth (not dentate). Pereiopods 3–7 not described by GURJANOVA. Pereiopods 3–4 rather stout, especially in second joint; emargination in hind margin of 4th side plate not deep. Pereiopod 5 longer than prp. 3, but shorter than prp. 6–7; anterior lobe of side plate not deep; second joint not much longer than broad, with margins smooth and nearly parallel, upper hind corner rounded and protruding upwards, lower hind corner rounded but not protruding. Pereiopod 6 has second joint much narrower than in prp. 5, maximal length nearly twice the breadth, fore margin smooth and nearly straight, hind margin slightly convex with upper hind corner protruding upwards and rounded triangular, and lower hind corner somewhat rounded but very little protruding. Pereiopod 7, second joint twice as long as it is broad, with margins almost parallel; upper hind corner slightly protruding, rounded, lower hind corner rectangular. Uropods 1–2 spinose, each with peduncle terminating in a long spine. Uropod 3 agrees with GURJANOVA's figure. In the ♂ from St. 105 I was not able to find the two lateral spines and the two long setæ in telson mentioned by GURJANOVA, but the setæ are present in the ♂ from St. 116.

Distribution. Kara Sea 71°26′ N, 57°34′ E, 280 m, gray mud, 2 specimens, and 74°35′ N, 75°26′ E, 32 m. 2 specimens (type-localities; GURJANOVA 1933 and 1935). Baffin Bay 78°15′5 N, 73°29′ W, 290 m, 2 ♂ ("Godthaab" Exp. St. 97, 8-VIII-1928, by K. STEPHENSEN in Meddel. om Grønl., vol. 79, no. 7, 1933 determined as *I.* (*nanoides* (H. J. H.)?)).

The two species with which *I. brusilovi* is probably synonymous, are found in the following places. Near New Zealand 40°28′ S, 177°43′ E, 2071 m, 1 ♂ and 1 ♀ (*P. hoeki*, type-locality; STEBBING 1888). Barents Sea 71°23′ N, 18°38′ E, 125 m, 1 ♂ (*P. tuberculatus*, type-locality; HOEK 1882) and 77°07′ N, 19°37′ E, 320 m, some specimens (*P. tuberculatus*; STEBBING 1891).

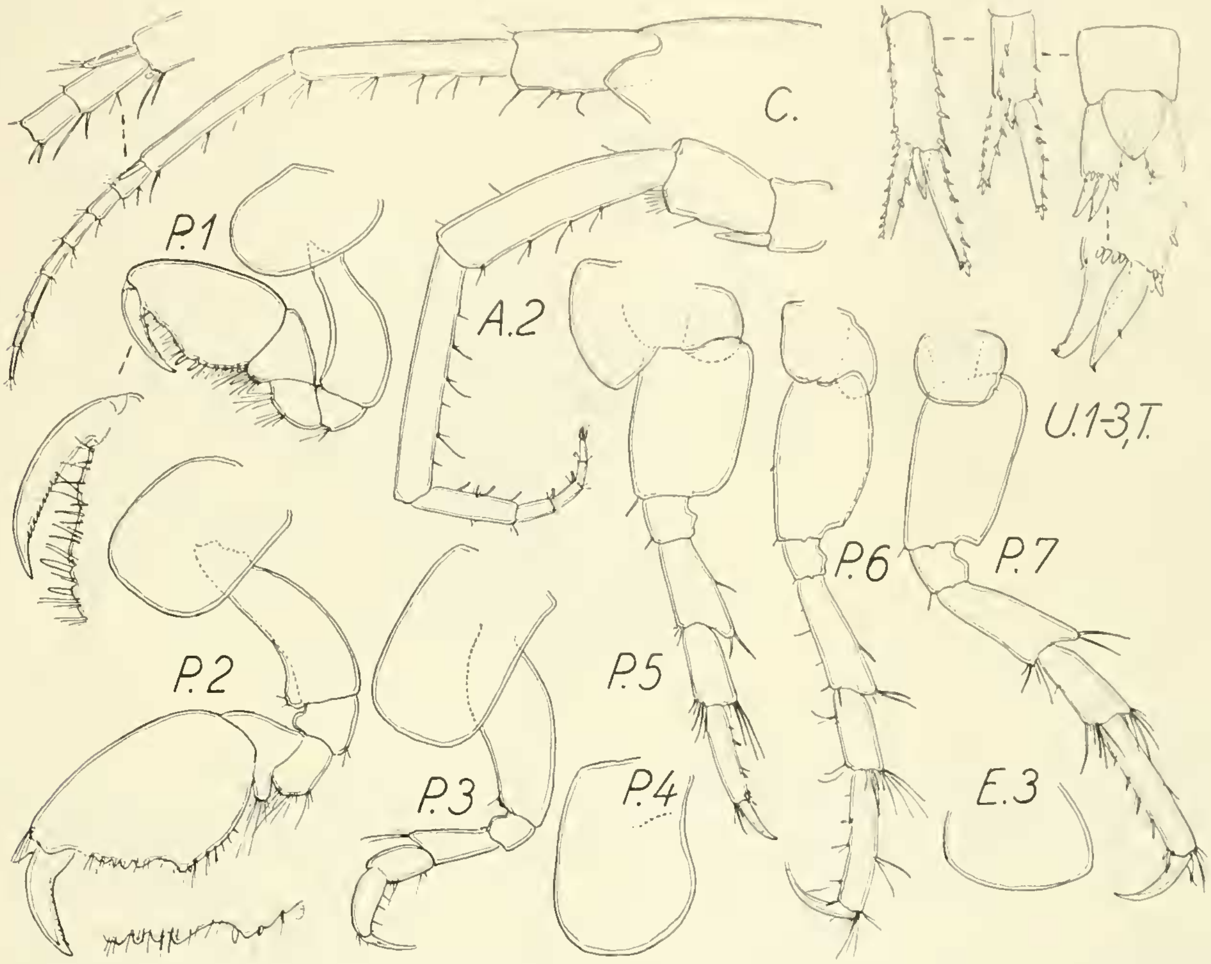

Fig. 24. *Ischyrocerus brusilovi* ♂. "Ingolf" St. 105.

Family: Corophiidæ Dana.

Corophiidæ G. O. Sars, Crust. of Norway, vol. 1, 1895, pp. 606–626, + *Podoceridæ* (in parte) pp. 601–605.
Corophiidæ Stebbing, Tierreich, vol. 21, 1906, p. 662.

Genus: Ericthonius Milne-Edwards.

343. Ericthonius megalops (G. O. Sars) (Chart IV).

Erichthonius megalops G. O. Sars, Crust. I. Norske Nordhavs Exp., 1885, p. 210, pl. 17 fig. 4.
Erichthonius megalops Stebbing, Tierreich, vol. 21, 1906, p. 673.

Occurrence:
63°13′ N, 15°41′ W, 1130 m, 4°5. "Ingolf" St. 7: 17-V-1895. 1 ♂.
66°18′ N, 25°59′ W, 621 m, ÷ 0°75. "Ingolf" St. 15: 4-VI-1895. 1 ♂.
63°30′ N, 54°25′ W, 1096 m, 3°3. "Ingolf" St. 25: 26-VI-1895. 2 ♀.
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 9-VIII-1895. Several specimens (♂, ♀, juv.).
66°16′ N, 26°8′ W, 600 m, ÷ 0°1. WANDEL 1891. 1 big ♂.
60°19′ N, 5°22′ W, 1200 m, ÷ 0°15. "Michael Sars" 18-VIII-1902, AD. S. JENSEN leg. 3 ♀, determination not certain.

Distribution (Chart IV). From Labrador(?) and Baffin Bay to White Sea; also the deep Polar Basin, depths 10–>1100 m. For special localities see K. STEPHENSEN, Tromsø Mus. Skr., vol. 3, 1935–42, p. 403.

Ericthonius, spp. indeterm.

66°35′ N, 56°38′ W, 599 m, 3°9. "Ingolf" St. 32: 11-VII-1895. 1 specimen.

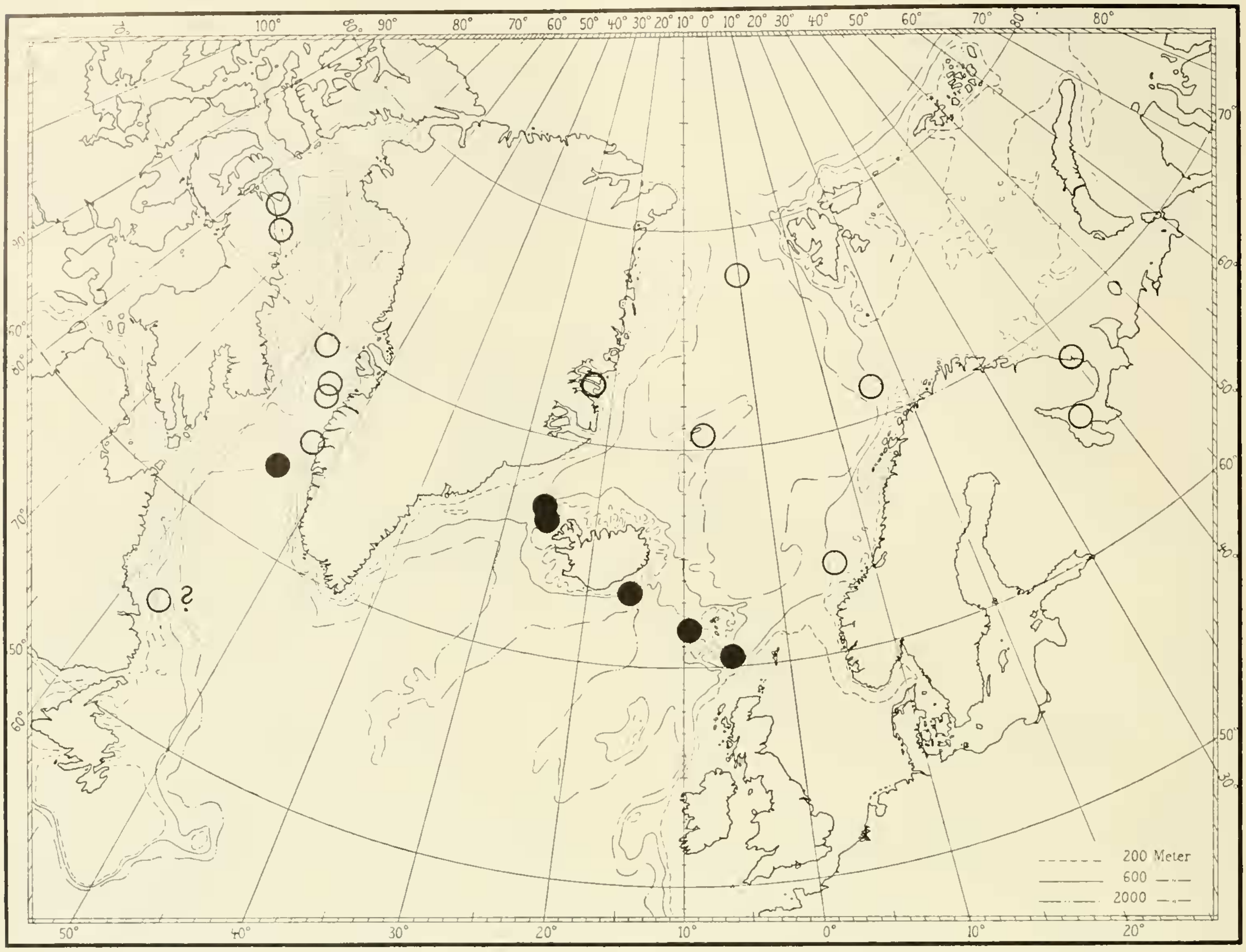

Chart IV. Distribution of *Ericthonius megalops*. ● = new localities, ○ = localities from the literature.

63°26′ N, 7°56′ W, 887 m, ÷ 0°6. "Ingolf" St. 138: 10-VIII-1896. A few specimens.
70°32′ N, 8°10′ W, 900 m. 27-VI-1891. 2 specimens.

Genus: **Neohela** S. I. Smith.

344. **Neohela monstrosa** (Boeck) (Chart V).

Neohela monstrosa G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 624, pl. 224.
Neohela monstrosa Stebbing, Tierreich, vol. 1, 1906, p. 675.

Occurrence:
66°23′ N, 7°25′ W, 1802 m, ÷ 1°1. "Ingolf" St. 104: 11-VII-1896. 1 ♂, 1 ♀ with marsupium.
69°13′ N, 8°23′ W, 1889 m, ÷ 1°0. "Ingolf" St. 117: 24-VII-1896. 4 specimens.
69°29′ N, 11°32′ W, 1667 m, ÷ 1°0. "Ingolf" St. 120: 25-VII-1896. About 10 specimens.
67°19′ N, 15°52′ W, 552 m, ÷ 0°5. "Ingolf" St. 126: 29-VII-1896. 1 small, defective.
63°26′ N, 7°58′ W, 887 m, ÷ 0°6. "Ingolf" St. 138: 10-VIII-1896. 1 ♂.
66°32′ N, 18°50′ W, 492 m. "Dana" St. 4616: 1-VIII-1933. 1 ♂.

It has been recorded from the following localities at depths > 400 m: 73°12′ N, 58°08′ W, 860 m, 0°5 (K. Stephensen, Meddel. om Grønl., vol. 79, no. 7, 1933, p. 51), and two samples in Bredefjord, SW. Greenland, 410–560 m (K. Stephensen, ibid., vol. 53, 1916, p. 295).

Length up to 31 mm (♂) and 25 mm (♀).

Distribution (Chart V). From Arctic America (Gaasefjord) and the New England States to Denmark, northern Norway and Spitsbergen; depths down to > 2200 m. For special localities see K. Stephensen, Zool. of Iceland, vol. 3, no. 26, 1940, p. 65, and Tromsø Mus. Skr., vol. 3, 1935–42, p. 404.

Genus: **Unciola** Say.

345. **Unciola laticornis** H. J. Hansen (Fig. 25).

Unciola laticornis H. J. Hansen, Vid. Medd. Naturh. Foren. Kjobenhavn, 1887, p. 166, pl. 6 figs. 7–7b.
Unciola laticornis Stebbing, Tierreich, vol. 21, 1906, p. 677.

Occurrence:
64°35′ N, 31°12′ W, 2448 m, 1°6. "Ingolf" St. 11: 21-V-1895. 1 ♂.
65°43′ N, 26°58′ W, 471 m, 6°1. "Ingolf" St. 16: 6-VI-1895. 1 ♂ (+ ? 1 defective ♀).

Remarks. H. J. Hansen had a single ♂, 5.7 mm, and since then no author has seen any specimen. The "Ingolf" Expedition has secured 2 ♂♂ and a rather defective small ♀, possibly belonging to the same species.

Hansen has given an excellent description (in Latin), accompanied by 3 drawings, viz., antenna 2, pereiopod 1, and urosome. Therefore I give drawings of the majority of the limbs with some supplemental remarks on the largest ♂, 9 mm, from St. 11. Rostrum acute, covers about $^1/_5$ of first joint of antenna 1 (Hansen: "cornu frontale brevius"), a trifle more protruding than lateral lobes. No eyes could be found (Hansen: "oculi manifesti, deluti"). Antenna 1 (lost in the type-specimen) as long as body from rostrum to apex of telson, possibly even still longer, for apex seems to be lost. The two proximal joints of peduncle subequal in length, reach to middle of ultimate joint of peduncle of antenna 2; first joint heavier than second, with 4 spines along under edge; third joint very short, about $^1/_5$ of second joint. Flagellum longer than peduncle, consists of > 24 joints, for apex is probably lost. Accessory flagellum very short, consists of two long and one very short joint. Antenna 2 agrees with Hansen l. c. (with figure), but penultimate joint of peduncle is a little longer, length about $2^1/_2$ times the breadth (Hansen: "vix duplo longior quam latior"), and also antepenultimate joint is longer than described by Hansen; flagellum in length equal to penultimate joint, has 13–14 joints. Pereiopod 1, hand somewhat more stout than shown by Hansen (fig. 7a); dactylus minutely serrate. Pereiopods 2–7 agree fairly well with Hansen's description.

All three pairs of epimeral plates have each a tooth on lower hind corner, increasing in length from first to third plate, and in the two last segments with a sinus above. Uropod 1, peduncle ends in a triangular acute process not drawn in Hansen's figure; rami about half the length of peduncle, with a few spines. Uropod 3 agrees with Hansen, but inner ramus has no setæ preserved.

The species is characterised by the 4 spines on under edge of first joint of antenna 1; accessory flagellum short (2 joints + short apical joint); lateral lobes of head truncate but narrow; shape of epimeral plates; uropod 3.

Distribution. Baffin Bay 69°16′ N, 58°08′ W, 350 m, stones and clay, 1 ♂ (type-locality; H. J. Hansen l. c.).

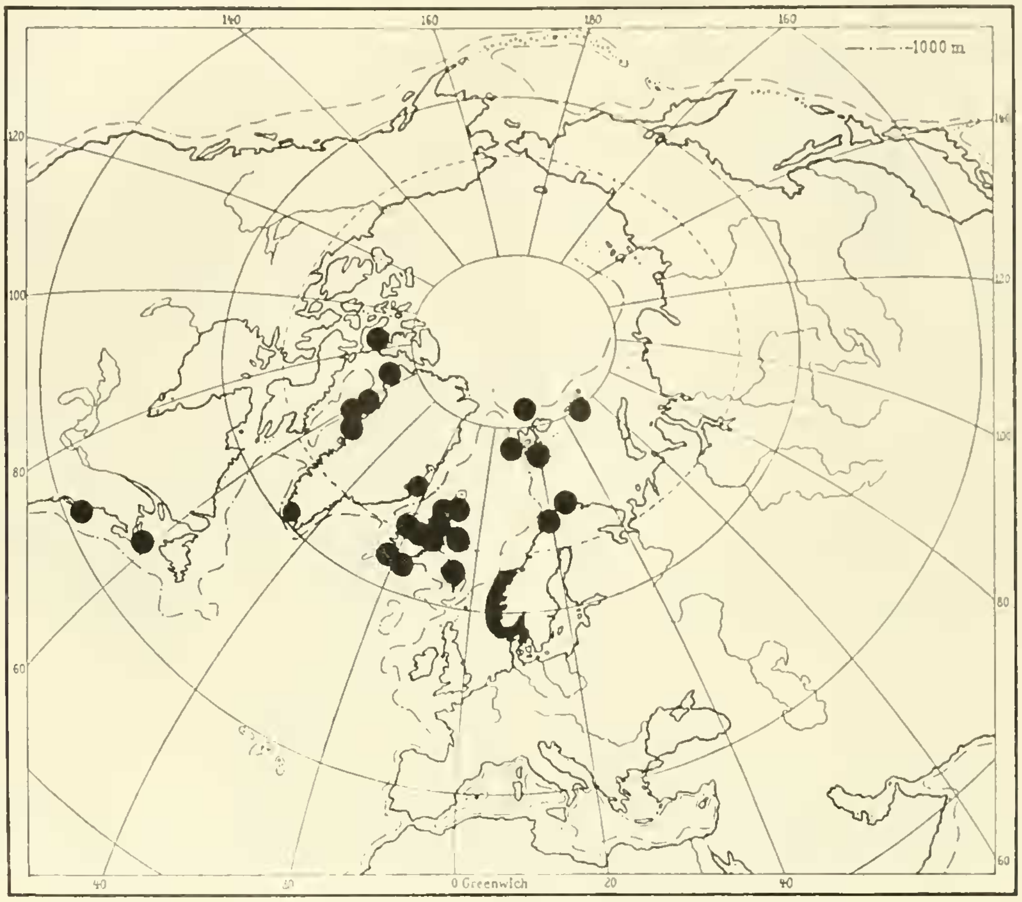

Chart V. Distribution af *Neohela monstrosa.*

346. **Unciola crassipes** H. J. Hansen (Figs. 26–27: Chart VI).

Unciola crassipes H. J. Hansen, Vid. Medd. 1887, p. 165, pl. 6 fig. 6, 6a.

Unciola crassipes Stebbing, Tierreich, vol. 21, 1906, p. 679.

Occurrence:

63°04′ N. 9°22′ W, 493 m, 5°3. "Ingolf" St. 2: 12-V-1895. 2 specimens.

64°54′ N. 55°10′ W, 740 m. 3°8. "Ingolf" St. 27: 1-VII-1895. 5 specimens.

66°35′ N, 56°38′ W, 599 m. 3°9. "Ingolf" St. 32: 11-VII-1895. Several specimens.

65°16′ N. 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. Numerous specimens.

62°57′ N. 19°58′ W. 957 m. "Thor" St. 166: 14-VII-1903. 4 specimens.

It has been recorded from the following locality at depth > 400 m: Davis Strait 66°22′ N, 57°16′ W, 686 m (K. Stephensen, Vid. Medd., vol. 64, 1912, p. 97).

Remarks on ♂, length up to 12 mm (H. J. Hansen: 9 mm). The "Ingolf"-specimens agree well with H. J. Hansen l. c., except in the following characters. Rostrum varies somewhat in length

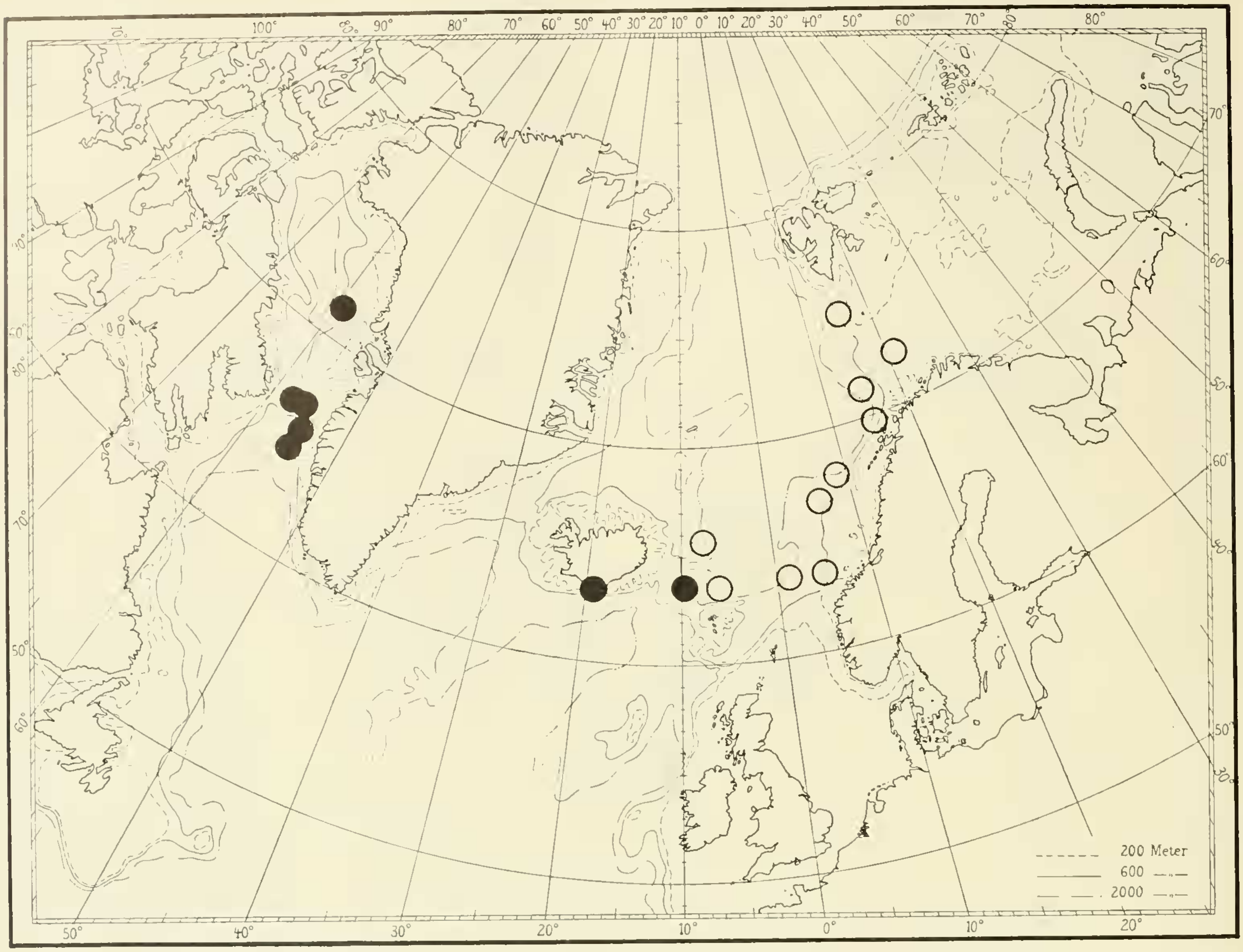

Chart VI. ● Distribution of *Unciola crassipes*. ○ *U. petalocera*.

(HANSEN: "cornu frontale sat longum"), covers from about $1/6$ to about $1/4$ of the length of first joint of antenna 1. Under rostrum is a notch, and then a rather high epistomal plate follows (Fig. 26,C). Lateral lobes of head truncate, much broader than in *U. laticornis*. Epimeral plates of metasome have hind margins rounded; lower hind corner in plate 1 almost rectangular, without tooth, in plate 2 with a small tooth, and in plate 3 with a somewhat larger tooth with a small sinus above. Antenna 1, flagellum in length equal to peduncle, about 25 joints; accessory flagellum has 4 joints + the minute apical joint. Antenna 2, 3rd joint almost as long as and a trifle broader than next joint; flagellum has about 17 joints. Pereiopod 1, hand differs a little from HANSEN l. c., in that the tooth on palm is nearer to finger hinge than in H.'s figure, and not with fore and hind edges symmetrical, but with apex turned toward finger hinge. Pereiopods 2–7 agree fairly well with *U. laticornis* (fig. 25). Uropod 1, peduncle twice as long as rami which have rather few spines (outer ramus, on outer edge 4, on inner edge 2). Uropod 2, peduncle twice as long as rami; outer ramus has on outer edge 2(3), on inner edge 2 spines; inner ramus on outer edge 1, on inner edge 3 spines. Uropod 3, peduncle somewhat triangular, longer than broad; outer ramus ovate, half the length of peduncle, with 3–4 spines and about 7 setæ; inner ramus shorter and narrower than outer, with 2–3 terminal spines and two setæ; it is articulate, but has no muscles. As regards inner ramus HANSEN writes (l. c., p. 166) "ramo interiore non a pedunculo membrana articulari separato, parvo", and (p. 167, Danish), "in *U. crassipes* inner ramus is distinct, but not separated by an articulation from peduncle".

Description of ♀ with marsupium, 11 mm (♀ was hitherto not described). Antenna 1, the two proximal joints of peduncle subequal in length, third joint in length $1/3$ of second joint; flagellum as in ♂. Accessory flagellum has 5 joints + the minute apical joint. Antenna 2 not heavier than antenna 1, and third and fourth joints of peduncle cylindrical, not with lamellar expansion as in ♂; fifth joint a trifle shorter than fourth which is about twice the length of third joint; flagellum not much longer than fourth joint of peduncle, 14-articulate. Pereiopod 1, 5th joint much larger than in ♂; also 6th joint differs, in that process defining palm is lower, but much broader than in ♂, and apically with a spine, and also tooth near finger hinge is lower and broader. Pereiopods 2–7 not differing from ♂. There are 5 pairs of marsupial plates: very large and oval in pereiopods 2–5, but narrow and short (– not broader and not much longer than gills –) in prp. 6. Other characters not different from ♂.

This species is characterised by the following features: lateral lobes of head very broad, apically truncate; antenna 1, peduncle with a few hairs, but without spines, and accessory flagellum has

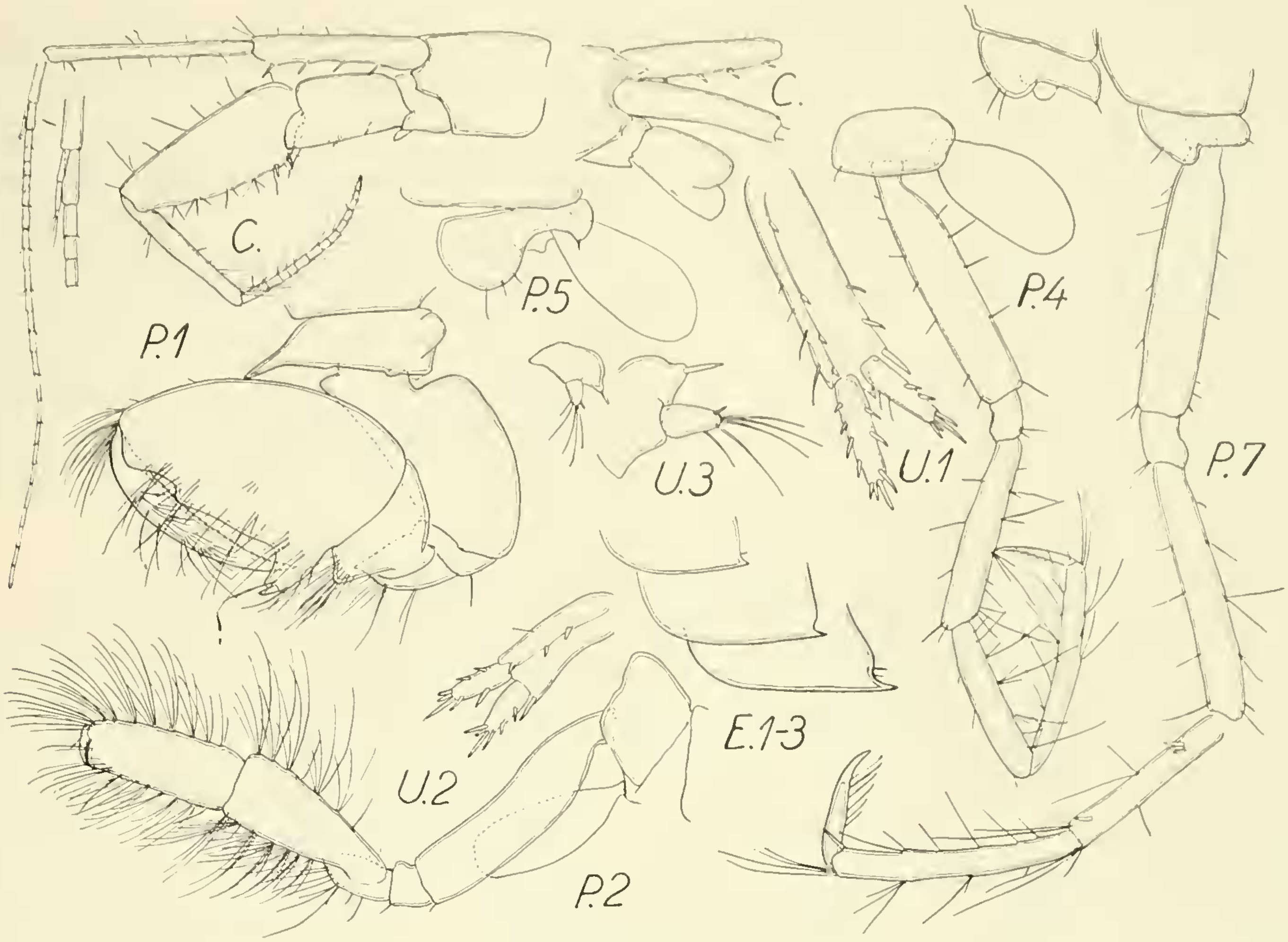

Fig. 25. *Unciola laticornis* ♂. "Ingolf" St. 11.

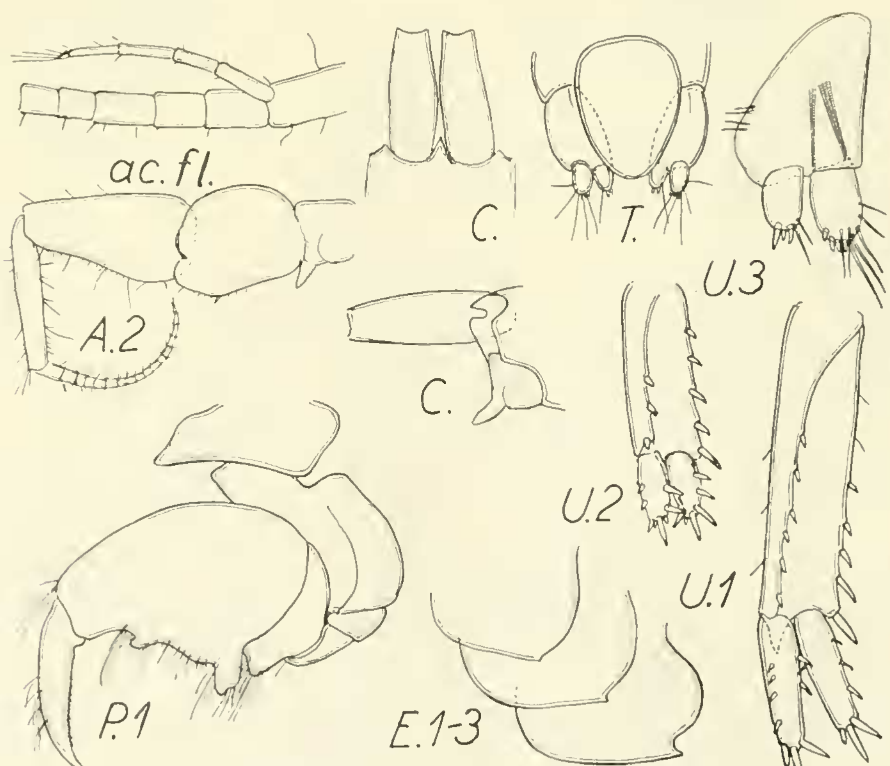

Fig. 26. *Unciola crassipes* ♂. "Ingolf" St. 35.

4 or 5 joints, + minute apical joint; shape of epimeral plates (see fig. 26); uropods 1–2, rami about half as long as peduncle; uropod 3, inner ramus articulate, shorter and narrower than outer, apically with 2–3 short spines.

Distribution. Baffin Bay 71°10′ N, 58°56′ W, 375 m, clay (type-locality; H. J. Hansen l. c.).

347. **Unciola petalocera** (G. O. Sars) (Fig. 28; Chart VI).

Unciola petalocera G. O. Sars, Crust., I, Norske Nordhavs-Exp., 1885, p. 212, pl. 17 fig. 5.
Unciola petalocera Stebbing, Tierreich, vol. 21, 1906, p. 681.

Occurrence:
65°34′ N, 7°31′ W, 1435 m, ÷ 0°8. "Ingolf" St. 105: 11-VII-1896. 1 ♂, 1 ♀.
63°36′ N, 7°30′ W, 1322 m, ÷ 0°6. "Ingolf" St. 139: 10-VIII-1896. Fragments of 3 large ♂ and a few very defective young specimens.

Remarks. The ♂ from St. 105 is 13 mm (Sars's type-specimens were 10 mm). Distal end of antenna 2 is lost, but it is easily recognizable e. g. by the very characteristic pereiopod 1 with the long dactylus. On the whole the specimen agrees well with Sars l. c., but a few details are noteworthy. A very short rostrum is present (see fig. 28); Sars writes "the head occurs truncate anteriorly, without exhibiting any distinctly prominent rostrum". Antenna 1, flagellum > 26 joints (apex probably lost); accessory flagellum a trifle longer than the two first joints of flagellum, has 3 joints + the minute apical joint (Sars: "two-jointed"). Antenna 2, only the 3 proximal joints are preserved. Oral parts were not dissected out. Epimeral plates, each has on lower hind corner a tooth with a sinus above; both tooth and notch are

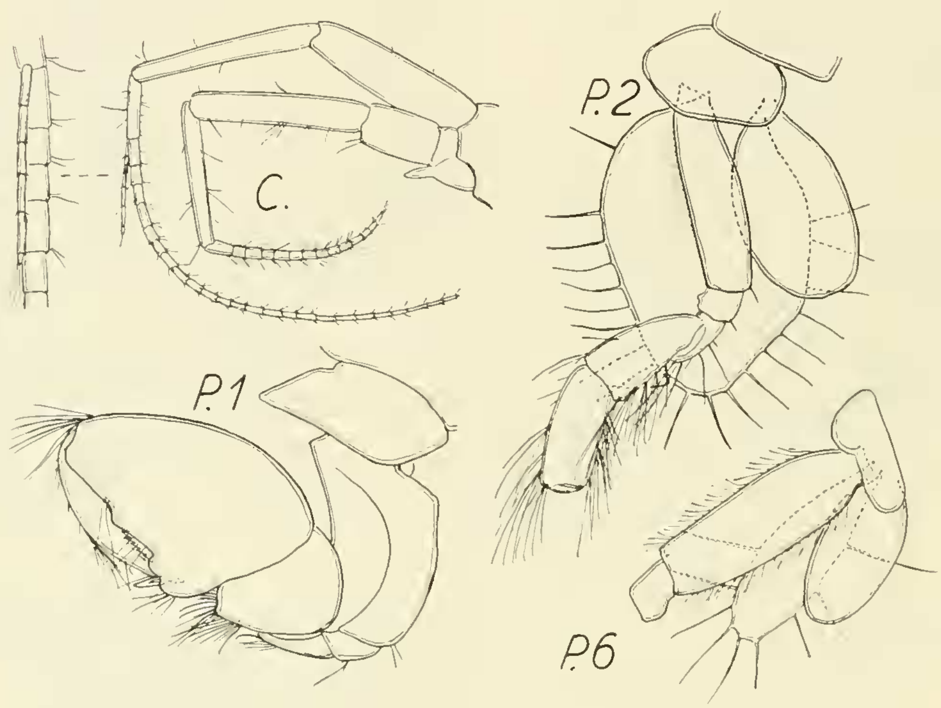

Fig. 27. *Unciola crassipes* ♀. "Ingolf" St. 35.

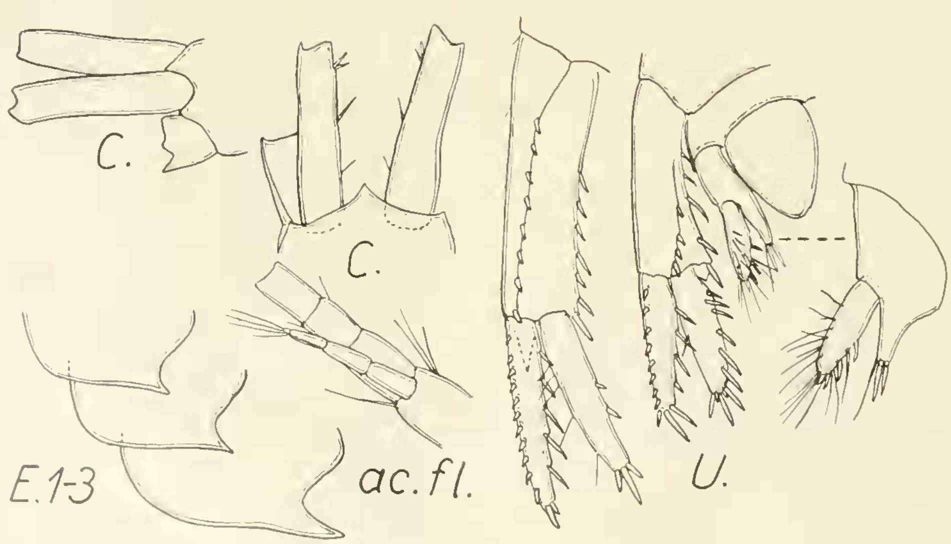

Fig. 28. *Unciola petalocera* ♂. "Ingolf" St. 105.

largest in segment 3 (Sars shows no sinus). Uropods 1–2 more spinose than in Sars's figure; peduncle of uropod 1 terminates in a strong tooth. Uropod 3, outer ramus twice as long as inner ramus which ends in two spines, but in the ♀ from St. 105 there is but one spine (Sars: 1 spine). I have found no setæ on telson (Sars: "furnished at the extremity with 2 short bristles").

The ♀ from St. 105, 9.5 mm, is still more defective than the ♂, but seems to agree well with Sars's description, except for the differences mentioned above.

Distribution (see Chart VI, p. 36). About 63°–75° N, 2°–16° E, 610–1200 m, ÷0°9–÷1°2, clay, 6 hauls (type-localities; Sars l. c.).

Unciola spp., defective or young specimens.

63°06′ N, 56°00′ W, 2258 m, 2°4. "Ingolf" St. 24: 25-VI-1895.
66°35′ N, 56°38′ W, 599 m, 3°9. "Ingolf" St. 32: 11-VII-1895.
65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895.
59°12′ N, 51°05′ W, 3521 m, 1°3. "Ingolf" St. 38: 30-VII-1895.
63°08′ N, 15°40′ W, 1301 m, 3°9. "Ingolf" St. 51: 18-V-1896.

Family: **Podoceridæ** Stebbing (= Dulichiidæ aut.).

Dulichiidæ G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 628.
Podoceridæ Stebbing, Tierreich, vol. 21, 1906, p. 694.

Genus: **Lætmatophilus** Bruzelius.

348. **Lætmatophilus armatus** Norman (Chart VII).

Lætmatophilus armatus G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 632, pl. 227 fig. 1.
Lætmatophilus armatus Stebbing, Tierreich, vol. 21, 1906, p. 697.
Lætmatophilus armatus K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 414 (lit., etc.).

Occurrence:
64°57′ N, 57°10′ W, 740 m, 3°8. "Ingolf" St. 27: 1-VII-1895. Numerous specimens.
65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. Numerous specimens.

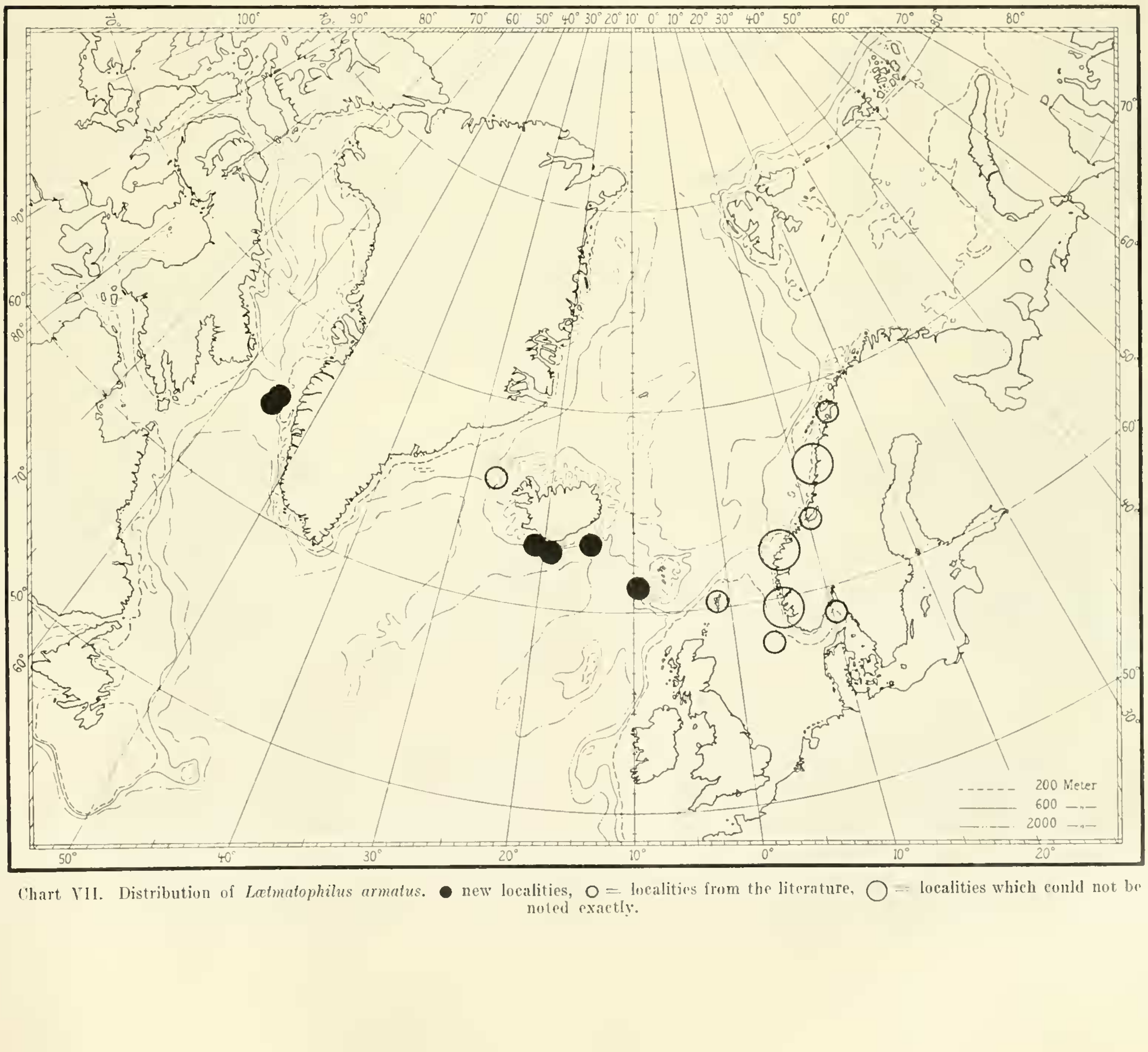

Chart VII. Distribution of *Lætmatophilus armatus*. ● new localities, ○ = localities from the literature, ◯ = localities which could not be noted exactly.

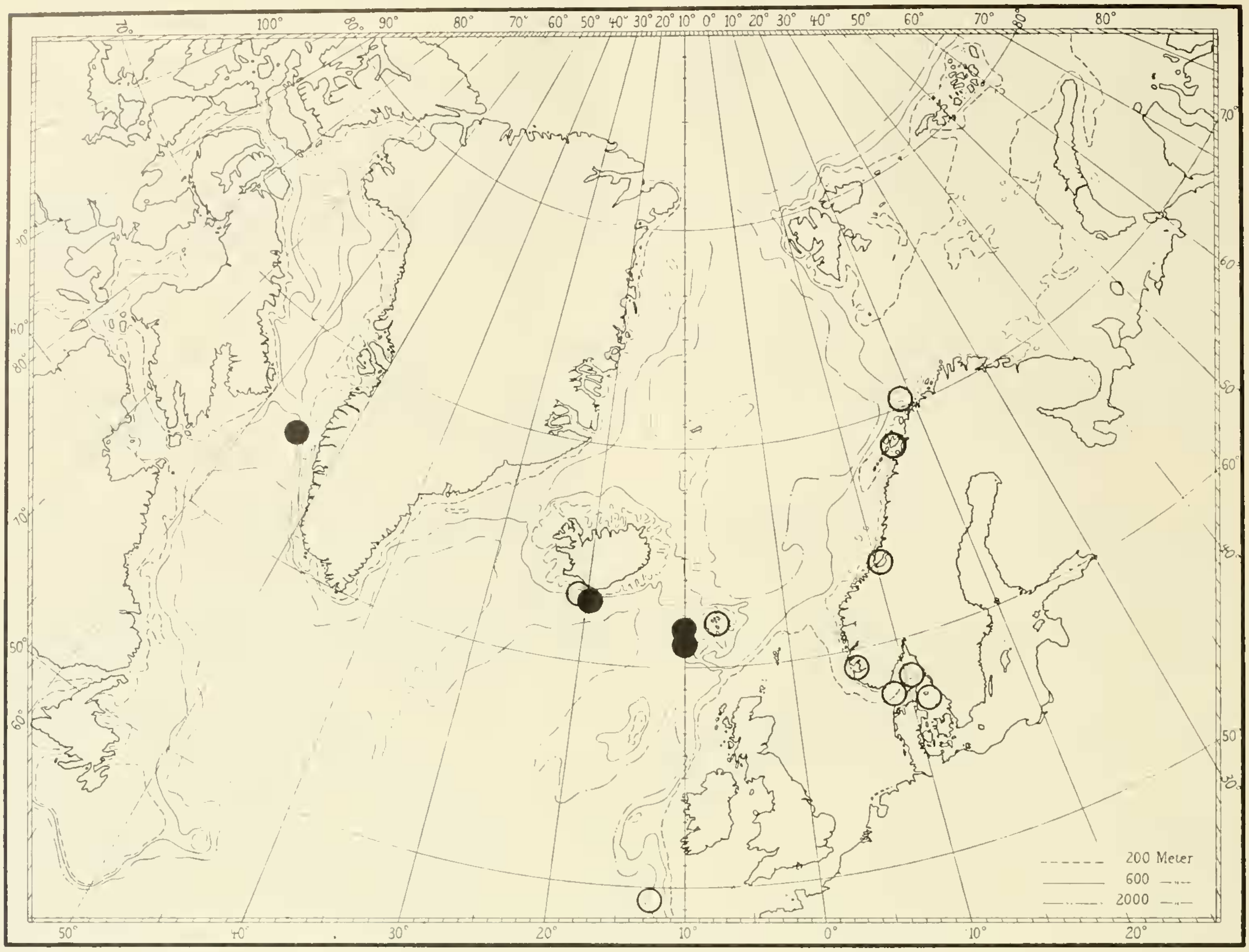

Chart VIII. Distribution of *Xenodice frauenfeldti*. ● = new localities, ○ = localities from the literature.

63°08′ N, 15°40′ W, 1301 m, 3°9. "Ingolf" St. 54: 18-V-1896. 1 specimen.

62°57′ N, 19°58′ W, 957 m. "Thor" St. 166: 14-VII-1903. Numerous specimens, incl. ovigerous ♀.

63°05′ N, 20°07′ W, 557 m. "Thor" St. 167: 14-VII-1903. A few specimens.

61°15′ N, 9°35′ W, 900 m. "Thor" St. 89: 22-V-1904. About 10 specimens.

Distribution (Chart VII). In addition to the localities above it is distributed at NW. and S. Iceland 216–326 m, and from N. Norway (Lofoten) to W. Africa 22° N, depths 36–900 m. For special localities see K. Stephensen l. c., and Zool. of Iceland, vol. 3, no. 26, 1940, p. 67.

Genus: **Xenodice** Boeck.

349. **Xenodice frauenfeldti** Boeck (Chart VIII).

Xenodice frauenfeldti G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 633, pl. 227 fig. 2.

Xenodice frauenfeldti Stebbing, Tierreich, vol. 21, 1906, p. 700.

Occurrence:

65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895. A few specimens including ovigerous ♀.

62°57′ N, 19°58′ W, 957 m. "Thor" St. 166: 14-VII-1903. 2 specimens.

63°05′ N, 20°07′ W, 557 m. "Thor" St. 167: 14-VII-1903. 3 specimens.

61°07′ N, 9°30′ W, 835 m. "Thor" St. 78: 12-V-1904. 1 specimen.

61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 2 specimens.

Distribution (Chart VIII). In addition to the localities above it has been found 49°25′ N, 12°20′ W, 1270–1180 m, "Thor" St. 93, 25-VI-1905, 1 specimen (in the Zool. Museum, Copenhagen). S. of Iceland 216–326 m, the Faroes 23–30 m, and from N. Norway 71° N to the Skagerrak and Kattegat, 56–640 m (K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 414, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 67).

Genus: **Dulichia** Krøyer.

Dulichia G. O. Sars, l. c. 1895, p. 634.

Dulichia Stebbing, l. c. 1906, p. 708.

After 1906 (Stebbing, Amphip. Tierreich) the following species have been established (according to Zool. Record up to 1940):

1. *D. bispina* Gurjanova, Zool. Anz., vol. 86, 1930, p. 245, figs.
2. *D. knipowitschi* Gurjanova, Zool. Anz., vol. 103, 1933, p. 127, no fig.

D. knipowitschi Gurjanova, Explor. mers U.R.S.S., fasc. 20, Inst. Hydrol. Leningrad, 1931, p. 87 (in Russian), figs.
D. aspina K. Stephensen, Meddel. om Grønl., vol. 79, no. 7, 1933, p. 57, figs.
D. knipowitschi Gurj. = *D. aspina* K. Steph., fide Gurjanova Zool. Anz., vol. 116, 1936, p. 151.

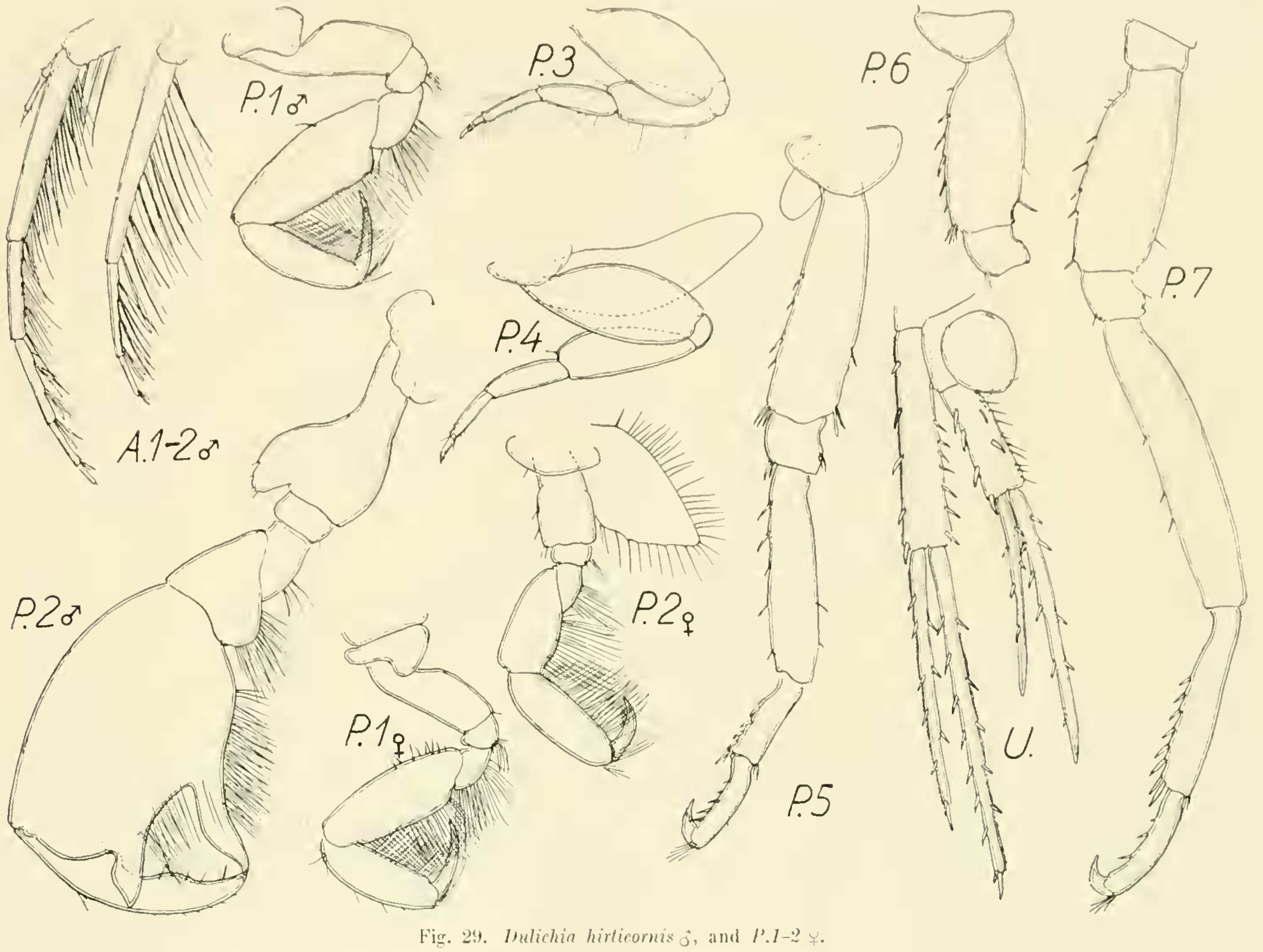

Fig. 29. *Dulichia hirticornis* ♂, and *P.1–2* ♀.

350. **Dulichia macera** G. O. Sars.

Dulichia macera G. O. Sars, Crust., Norske Nordhavs-Exp., vol. 1, 1885, p. 220, pl. 18 fig. 2.
Dulichia macera Stebbing, Tierreich, vol. 21, 1906, p. 710.

Occurrence:
Jan Mayen 70°32′ N, 8°10′ W, 885 m, clay with small stones (H. J. Hansen, Meddel. om Grønl., vol. 19, 1895, p. 130). The specimen is a ♂, about 9 mm in length, and very defective; antennæ 1–2, and pereiopods 3 and 5–7 are lost.

Distribution. The deep Polar Basin: 69°41′ N, 15°51′ E, 1591 m, ÷ 1°2, sabulous clay, and 72°57′ N, 14°32′ E, 817 m, ÷ 0°8, clay (type-localities; G. O. Sars l. c.). Not found elsewhere.

351. **Dulichia hirticornis** G. O. Sars (Fig. 29).

Dulichia hirticornis G. O. Sars, Crust., Norske Nordhavs-Exp., vol. 1, 1885, p. 218, pl. 18 fig. 1.
Dulichia hirticornis Stebbing, Tierreich, vol. 21, 1906, p. 711.

Occurrence:
61°30′ N, 4°21′ W, 950 m, ÷ 0°5, mud. Wandel leg. 1890. Several specimens up to 8–9 mm.
61°19′ N, 5°22′ W, 1200 m, ÷ 1°15. "Michael Sars" 10-VIII-1902, Ad. S. Jensen leg. About 10 specimens (♂, ovigerous ♀), 10–11 mm.

Remarks. Though the large specimens (from the "Michael Sars") agree fairly well with G. O. Sars l. c., there are some differences. Antenna 1 ♂, flagellum in length equal to last joint of peduncle, and consisting of 5 joints, the first of which is a trifle shorter than the following taken together (Sars: "the flagellum is shorter than the last joint of the peduncle, and composed of 4 segments, of which the 1st is considerably longer than are all the other three taken together"). Accessory flagellum is 3-articulate (Sars: "very small"). Antenna 2 ♂, flagellum has 3 joints; their length ratio: 9:4:2 (Sars says only that it is "somewhat shorter than on the 1st pair"). Antennæ 1–2 ♀ not different from ♂. Eyes (in both sexes) colourless, round, rather little projecting, but not smaller than in *D. porrecta* (Sars: "very small, do not project toward the sides; they are oval-rotund in form, somewhat oblique as to position, and furnished with very light whitish-yellow pigment").

Pereiopod 1 ♂ is not described by Sars. 5th joint is rather broad, nearly 1½ times as long as 6th joint which is rather narrow, with hind margin straight; dactylus two thirds the length of 6th joint. Pereiopod 2 ♂ agrees fairly well with Sars l. c.; but Sars does not mention the large lobe at the distal end of 2nd joint and the tubercle on dactylus near finger hinge. Pereiopod 1 ♀ not essentially different from pereiopod 1 ♂. Pereiopod 2 ♀ similar to pereiopod 1; the most important differences are: 2nd joint has a "wing" along the fore margin, it is, however, much narrower than in pereiopod 2 ♂; 5th joint rather short, a trifle shorter than 6th joint; dactylus setose at the concave side. Pereiopods 3–4 in both sexes, second joint elliptical, maximal breadth about two fifth the length; in pereiopod 3 second joint is about as long as 4th and 5th joints together, in pereiopod 4 it is $1^{1}/_{2}$ times the length of 4th joint; 4th joint somewhat broader than the following joints. Pereiopods 5–6 ♂ and ♀ subequal in length, somewhat shorter than pereiopod 7; second joint in pereiopod 6 shorter than in prp. 5 and 7, and in breadth equal to the same joint in prp. 7, but narrower than in prp. 5. The uropods are said by Sars to have the usual structure. Uropod 1, length ratio of rami and peduncle: 6:5:4; in uropod 2 the length ratio is: 9:6:4; peduncle of uropod 1 about twice the length of peduncle of uropod 2; both of the uropods are spinulose. There is no marked sexual difference in the uropods.

Distribution. The deep Polar Basin: 62°44′ N, 1°48′ E, 733 m, ÷ 1°0, clay; 63°10′ N, 5°0′ E, 763 m, ÷ 1°0, sabulous clay; and 71°25′ N, 15°41′ E, 1134 m, ÷ 1°0, clay (type-localities; G. O. Sars l. c.).

352. **Dulichia nordlandica** Boeck.

Dulichia nordlandica G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 641, pl. 231 fig. 2, pl. 232 fig. 1.
Dulichia nordlandica Stebbing, Tierreich, vol. 21, 1906, p. 711.

Occurrence:
63°06′ N, 56°00′ W, 2258 m, 2°4. "Ingolf" St. 24: 25-VI-1895. 1 ♂.
64°54′ N, 55°10′ W, 740 m, 3°8. "Ingolf" St. 27: 1-VII-1895. 1 ♂.
62°0′ N, 21°36′ W, 1591 m, 3°3. "Ingolf" St. 40: 9-VIII-1895. 1 juv., defective, determination not certain.
63°05′ N, 20°07′ W, 557 m. "Thor" St. 167: 14-VII-1903. 1 ♂.

Distribution. From the Skagerrak along Norway to Lofoten, 200–640 m; for special localities see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935–42, p. 418.

353. **Dulichia abyssi** n. sp. (Figs. 30–31).

Occurrence:
64°34′ N, 31°12′ W, 2448 m, 1°6. "Ingolf" St. 11: 21-V-1895. 1 ♂, 4 mm.
63°30′ N, 54°25′ W, 1096 m, 3°3. "Ingolf" St. 25: 26-VI-1895. 1 ♂, 5 mm.
61°50′ N, 56°21′ W, 2702 m, 1°5. "Ingolf" St. 36: 28-VII-1895. A few specimens up to 5 mm (♂, ♀; and a few juv., belonging to the same species?).
60°17′ N, 54°05′ W, 3229 m, 1°4. "Ingolf" St. 37: 29-VII-1895. 1 ♂, 6 mm (type).

The few ♂♂ in the material are rather defective (antennæ 1–2 and several other appendages are lost); but in all of them pereiopods 1–2 and uropoda are kept.

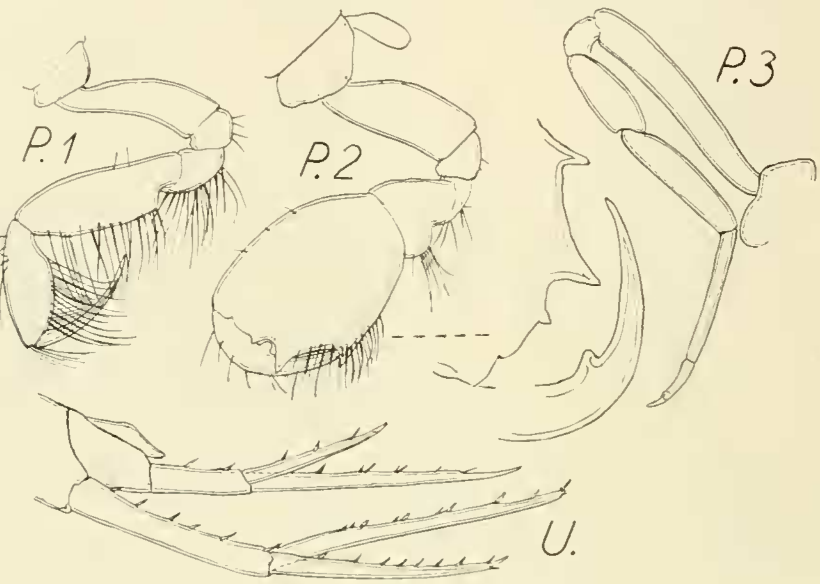

Fig. 30. *Dulichia abyssi* ♂. "Ingolf" St. 37.

Description of ♂, about 6 mm, from St. 37 (Fig. 30). Body rather slender, smooth. Head shorter than the two first segments combined, not much produced. No traces of eyes could be found Antennæ 1–2 lost. Side-plates all rather small, none of them armed with spines or teeth. Pereiopod 1, 5th joint about $1^{1}/_{2}$ times as long as 6th joint; dactylus in length equal to 6th joint. Pereiopod 2, 5th joint cup-shaped, short, 6th joint broad oval, rather similar to *D. spinosissima* (G. O. Sars 1895, pl. 228); palm defined by a strong tooth, and having a larger and a smaller tooth near finger-hinge; dactylus strong, overlapping palm, with a tooth on inner margin near base. Pereiopod 3, second joint not dilated, in length equal to 4th and 5th joints together. Pereiopod 4, the distal joints are lost; but in specimens from other stations, with the limb preserved, second joint is widened in the central part and shorter than $1^{1}/_{2}$ times the length of 4th joint; thus second joint is much shorter than 4th and 5th joints together. Pereiopods 5–7 lost. Uropod 1, peduncle with 5 spines on outer margin; peduncle in length subequal to outer ramus, or two thirds of inner ramus. Uropod 2, peduncle shorter than in uropod 1, two thirds of outer ramus or one third if inner ramus.

The ♂ from the other stations agree fairly well with the type described above, but are somewhat smaller, 4–5 mm; in the smallest ♂, 4 mm (Stat. 11), pereiopod 2 has a form intermediate between the type and the specimen from St. 24 described below as *D.* (*abyssi*?).

Ovigerous ♀, 5 mm. In the sample from St. 36 there are a few ♀, including a single ovigerous ♀ and a ♀ with marsupium; but they are rather defective. Antenna 1 seems to be normal, but is rather damaged; articulation in flagellum cannot be stated with certainty. Antenna 2 lost. Pereiopod 1 not essentially different from prp. 1 ♂. Prp. 2, second to fourth joints similar to ♂: 5th joint much shorter than second, but a trifle broader; 6th joint in length equal to 5th, oval, maximal breadth about three fifths of length, with a short, slightly concave palm, and with spines and setæ on under margin; dactylus not essentially longer than palm, not very stout. Pereiopods 3–4 not essentially different from ♂. Pereiopods 5–7 lost. Uropods 1–2 not very different from ♂, but peduncles shorter in relation to rami.

This new species differs from all other species of the genus, except *D. spinosissima* Kr. (G. O. SARS 1895, pl. 228), in the oval hand of pereiopod 2 in both sexes. Especially in ♀ pereiopod 2[1]) is very different from all other species (except *D. spinosissima*): usually 6th joints in pereiopods 1 and 2 in the other species are fairly alike.

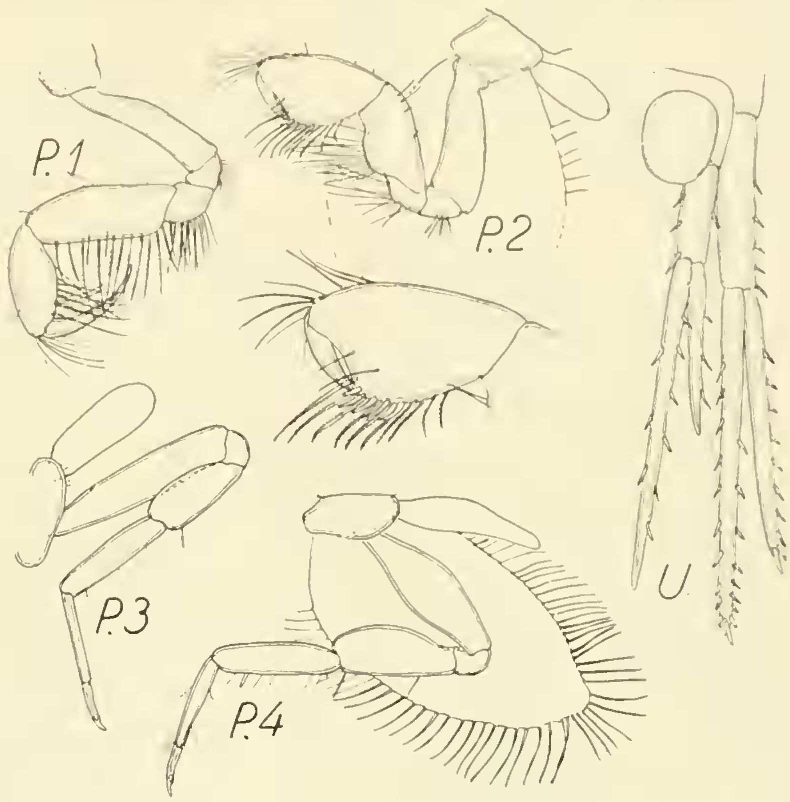

Fig. 31. *Dulichia abyssi* ♀. "Ingolf" St. 36.

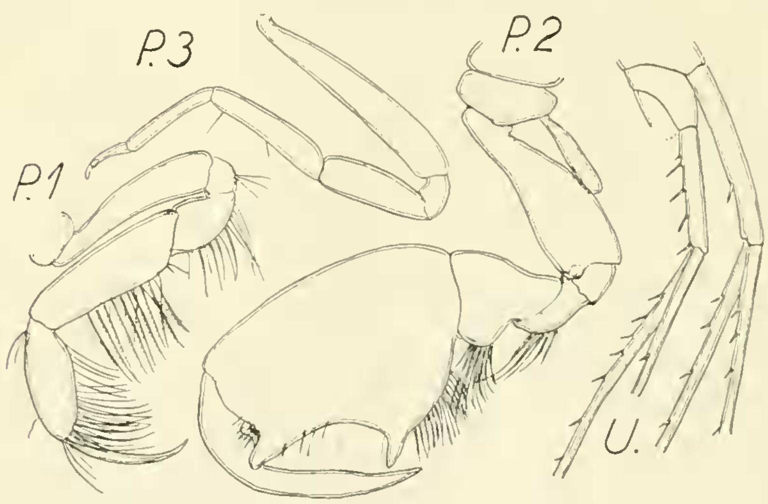

Fig. 32. *Dulichia* (*abyssi*?). "Ingolf" St. 24.

353 a. **Dulichia (abyssi?)** (Fig. 32).

Occurreuce:
63°06′ N. 56°00′ W. 2258 m. 2·4. "Ingolf" St. 24: 25-VI-1895.
1 ♂ about 6 mm.

Description. This specimen is rather defective: antennae 1–2, pereiopods 5–7, and apices of rami of uropods are lost.

It seems to be very close to, if not identic with, *D. abyssi*. But the hand of pereiopod 2 is a little different: in the present specimen it is somewhat longer, with longer interspace between the two large teeth of palm, and the small tooth on palm near finger hinge in *D. abyssi* is still smaller in the specimen from Stat. 24; dactylus somewhat longer. Also in uropod 2 there is a difference: peduncle is longer, viz., two thirds (not half) the length of peduncle of uropod 1. Pereiopods 1 and 3–4 agree well with *D. abyssi*.

354. **Dulichia spinosa** n. sp. (Figs. 33–34).

Occurrence:
61°42′ N, 9°36′ W, 1026 m, 4·8. "Ingolf" St. 11: 14-VIII-1895.
1 ♂ ad., 1 ♂ juv., and a few ♀ ovig., all rather defective.

Description of ♂ ad., 6 mm (Fig. 33). Head and body nearly as in *D. porrecta*. Eyes well developed, round, colourless, size as

1) pereiopod 2♀ is not described in *D. arctica* Murdoch 1885, *D. bispina* Gurjanova 1930, and *D. macera* G. O. Sars 1879.

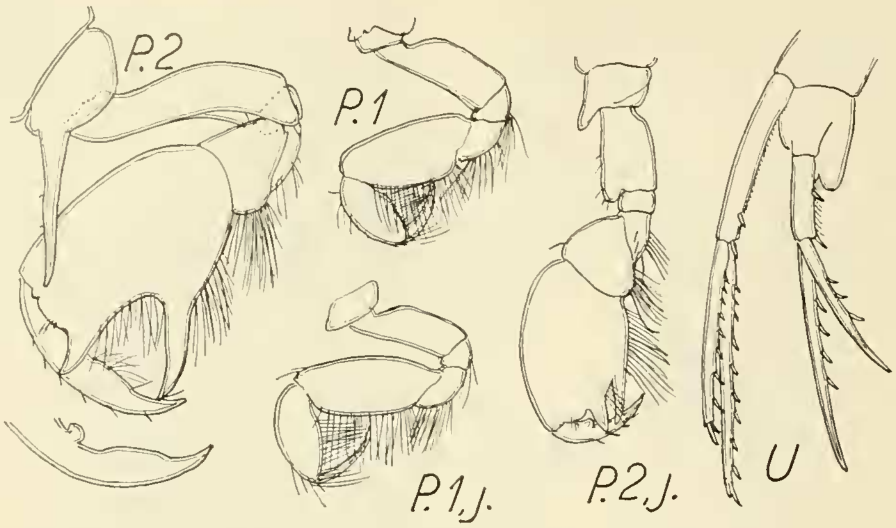

Fig. 33. *Dulichia spinosa* ♂ and young ♂ (*J* = young specimen).

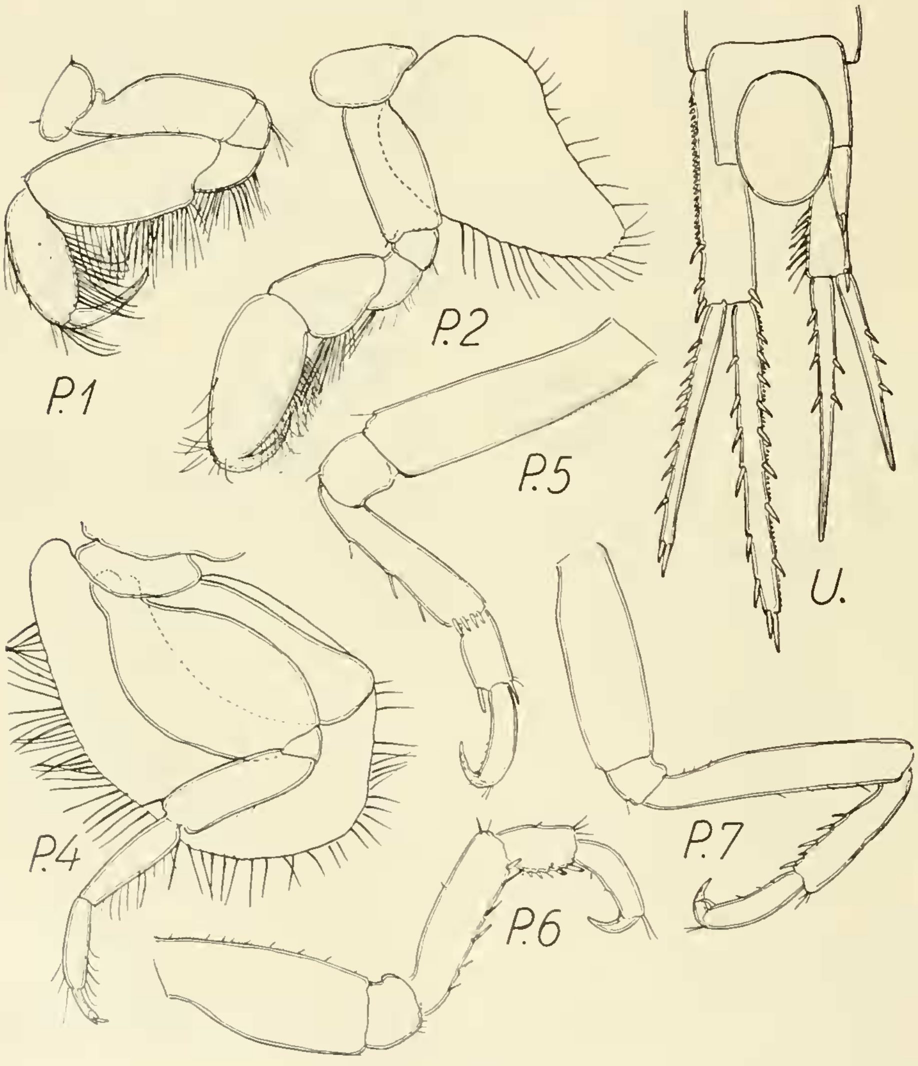

Fig. 34. *Dulichia spinosa* ♀.

in *D. porrecta*. Antennæ 1–2 lost. Pereiopod 1, side plate rather small, rounded rectangular, without spiniform process; 5th joint very broad, over $1\frac{1}{2}$ times as broad as the oblong oval next joint. Pereiopod 2, side plate has a long spiniform process, two thirds the length of second joint; second joint long, distally with a rounded lobe; 6th joint in length equal to second joint, broad, with a large, oblique thumb-like process and a shorter process near finger hinge; dactylus has at base inside a process. Pereiopods 3–4 rather short, second joint dilated; pereiopods 5–7 lost. Uropods 1–2 agree in the relative lengths of peduncles and rami fairly well with *D. porrecta*; and as in the said species uropod 1 has both outer margin of peduncle and inner margin of inner ramus (not drawn in my fig. of ♂) minutely spinulose.

A ♂ juv., about 1.5 mm, differs from the adult ♂ mainly in pereiopod 2 which has the spine on the side plate much smaller; second joint very short, and likewise the thumb on metacarpus very short. Pereiopod 2 is not much longer than pereiopod 1 which is of an appearance not mainly different from the adult ♂.

Description of ♀ ovig., about 6 mm (Fig. 34). Antennæ 1–2 as in *D. porrecta*. Pereiopods 1 and 3–4 not different from ♂. Pereiopod 2, side plate evenly rounded, without spine; 5th joint over two thirds the length of second joint; 6th joint oval, $1^1/_2$ times as long as 5th joint; dactylus evenly curved, half as long as 6th joint. Pereiopods 5–7 not essentially different from *D. porrecta*; second joint in pereiopod 6 broader and shorter than in pereiopod 5. Uropods 1–2 agree well with those of ♂.

Dulichia, species indeterm.

65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895 1 ♀, very defective.

III. Tribe: Ingolfiellidea.

Ingolfiellina H. J. Hansen, The Ingolfiellidæ, fam. n., a new Type of Amphipoda. – Jour. Linn. Soc., Zool., vol. 29, 1903, p. 131.

Family: Ingolfiellidæ H. J. Hansen.

Ingolfiellidæ H. J. Hansen, l. c. 1903, p. 130.

Genus: Ingolfiella H. J. Hansen.

Ingolfiella H. J. Hansen, l. c. 1903, p. 130.

355. Ingolfiella abyssi H. J. Hansen.

Ingolfiella abyssi H. J. Hansen, l. c. 1903, p. 118, pl. 14 figs. 1–18, pl. 15 figs. 19–21.

Occurrence:
59°12′ N, 51°05′ W, 3521 m, 1°3. "Ingolf" St. 38: 30-VII-1895. 1 specimen (type-locality: H. J. Hansen l. c.).

Not found elsewhere.

IV. Tribe: Caprellidea.

Family: Caprellidæ Dana.

Since 1903, when P. Mayer issued his list and key to all genera of Caprellidæ (Siboga-Exp., vol. 34, pp. 14–16), the following new genera have been erected (according to Zool. Record up to 1938):

Liriarchus, for *L. perplexus* n. sp. (SW. Australia), P. Mayer, in Fauna Südwest Austral., herausgeb. v. W. Michaelsen u. R. Hartmeyer, vol. 4, 1912, p. 5, figs.

Mayerella, for *M. limicola* n. sp. (Bay of Fundy), Huntsman, Contrib. Canad. Biol. 1911–14, fasc. I, 1915, p. 40, figs.

Æginoides, for *Æ. gaussi* n. sp. (S. Indian Ocean), Schellenberg, D. Südpolar-Exp., vol. 18, 1926, p. 465, figs.[1]).

Pseudocaprellina, for *P. pambanensis* n. sp. (Gulf of Manaar, shallow water), Raj, Bull. Madras Mus., vol. 1, 1927, p. 127, figs.

Dodecasella, for *D. elegans* n. sp. (S. Georgia), Barnard, Ann. Mag. Nat. Hist., (10), vol. 7, 1931, p. 430, and Discovery Rep., vol. 5, 1932, p. 304, fig.

Eugastraulax, for *E. japonicus* n. sp. (Japanese Sea), Schurin, Zool. Anz., vol. 112, 1935, p. 200, figs.

Haploarthron, for *H. laeve* n. sp. (Japanese Sea), Schurin, ibid., p. 202, figs.

Proaginina n. gen., for *Parvipalpus norvegicus* K. St. 1931, K. Stephensen, Zool. of Iceland, vol. 3, no. 26, 1940, p. 70.

Pedoculina Baceseui n. gen. et n. sp. Un nouveau caprellide des parages de Monaco. – A. Carausu, Bull. Inst. Océanogr. Monaco, no. 796, 20 mai 1941, 8 pp., figs.

Parvipalpina, *Protellina*, and *Thorina* nn. gen., are described below.

1) *Neoxenodice caprellinoides* n. gen. n. sp. Schellenberg 1926, is in Zool. Record 1926 erroneously listed under *Caprellidea*; belongs to fam. *Podoceridæ* (= *Dulichiidæ*).

Genus: Protellina n. gen.

Pereiopods 3–4 missing, the other pairs normal. 3 pairs of gills (on second to fourth segment). Antenna 1, a short accessory flagellum present. Antenna 2, flagellum 6-articulate. Mandible with molar process and three-articulate palp; maxillipeds normal (the other oral parts are not examined). 1 pair of three-articulate pleopods in ♂. ♀ unknown.

Genotype: *Protellina ingolfi* n. sp.

356. Protellina ingolfi n. sp. (Fig. 35).

Occurrence:
65°34′ N, 7°31′ W, 1435 m, ÷ 0°8. "Ingolf" St. 105: 11-VII-1896. 1 ♂, about 19 mm.

Description of ♂ (adult?), 19 mm (Fig. 35). Body rather narrow and elongate; the coalesced cephalon + first mesosome

List of the most important characters of the new genera[1]).

	Ant. 1, no. of joints in flagellum	No. of free joints in the limbs on segments III—V			Gills on segment II	Palp of mandible		Maxillipeds I = inner lobe O = outer lobe	No. of pairs of limbs on abdomen	
		III	IV	V		No. of joints	No. of setæ on apical joint		♂	♀
Liriarchus	2	0	0	♂ 0 ♀ 1	×	3	4	I = O ?	1, 1-artic.	as ♂
Mayerella	2	2	2	3	0	3	1	I < O	1, 1-artic. + 1 pair of series of bristles	1 (bristles) no legs
Æginoides	4	1	1	4	0	3	8	I > O	2, 1-artic.	?
Pseudocaprellina	0	0	0	3	×	3	several	?	2, 1-artic.	?
Dodecasella	♂ 6 ♀ 5	6	0	4	0	3	several	?	2, 2-artic.	as ♂
Eugastraulax	?	0	0	6	0	?	?	I = O	?	?
Haploarthron	?	0	0	6	0	?	?	I = O	?	?
Proæginina	1	0	0	6	0	3	> 2	I < O	2, 2-artic.	as ♂
Pedoculina	2	1	1	4	0	0	0	I < O	?	?
Protellina	6	0	0	6	×	3	numerous	I < O	1, 3-artic.	?
Parvipalpina	2	0	0	1	0	3	2	?	0	?
Thorina	2	0	0	6	0	3	numerous	I = O	?	2, 2-artic.

[1]) Arranged like the "tabellarische Übersicht der Gattungen" in P. MAYER, Siboga-Exp., vol. 34, 1903, p. 14; but the "Ruderhaare" (for definition see P. MAYER, Fauna u. Flora Golf Neapel, vol. 6, 1882, p. 107) are omitted, as the literature on the new genera has no mention of them.

segment in length about two thirds of second segment. Third to fifth segments subequal in length, about $1^1/_2$ times as long as second segment; 6th segment in length equal to first; 7th segment not longer than deep. Urosome very short, with a short dorsal lobe and a pair of short lateral lobes: on pleopods see below.

First to 5th segments have each one spine at the posterior end in the dorsal line, and second to 5th segments have besides a pair of spines nearly at the central part of the dorsal side; 6th segment has a pair of dorsal spines at the hind end, and 7th segment is dorsally smooth. In addition to the spines mentioned above second segment has two spines at each side of the fore end; third and fourth segments have one pair of lateral spines at the fore end, and third to 7th segments have a spine above the basal part of the corresponding gill or limb. Besides second to sixth segments have some small acute warts along the dorsal and ventral sides.

Eyes small, orbicular, colourless.

Antenna 1 (apex lost), at least as long as head + three first segments; second and third joints subequal in length, twice as long as first joint; the preserved part of flagellum as long as third joint of peduncle, and consisting of 17 joints; accessory flagellum half as long as first joint of flagellum, has one joint. Antenna 2 reaches to distal end of second joint of antenna 1; the two distal joints of peduncle subequal in length: flagellum in length two thirds of 5th joint of peduncle, 6-articulate.

Pereiopod 1 with carpus expanded below to a rounded lobe; hand longer than carpus and oval triangular in form, palm straight and defined by an obtuse angle carrying a short spine. Pereiopod 2 has none of the proximal joints apically produced into acute projections; carpus very short, hand exceedingly large and oblong fusiform in outline, with upper edge slightly arcuate, and with lower edge forming two distant acute lappets, the posterior of which is tipped with a small spine, and having in front a broad, denticulate projection, defined behind by a deep sinus; dactylus strong, falciform, as long as the long palm. Pereiopods 5–7 are alike, but a trifle increasing in length from prp. 5 to prp. 7; 6th joint rather strong and with palm spinulose and defined by a projection with 2–3 juxtaposed spines (also 4th–5th joints have short, but rather strong spines along fore edge); dactylus strong, slightly curved. Pereiopod 5 is fixed not at hind end, but a trifle behind middle of 5th segment.

The gills are narrow, and in segment 2 much shorter than in segments 3–4. No penis could be found.

The three joints in the pleopods are subequal in length, but tapering toward the apex.

Genus: Parvipalpina n. gen.

Pereiopods 3–4 missing, pereiopod 5 consists of a single bud-like joint. Pereiopods 6–7 normal. 2 pairs of gills (on third and fourth segment). Antennæ 1–2 rather short; accessory flagellum very short. Antenna 2 has no "Ruderhaare"; flagellum 2-articulate.

Oral parts were not dissected out. Palp of mandible is 3-articulate, with two spines on third joint; maxillipeds, palp seems to be normal; inner and outer lobes could not be examined.

Abdomen of ♂ has no appendages. ♀ unknown.

Genotype: *Parvipalpina verrucosa* n. gen. n. sp.

357. Parvipalpina verrucosa n. sp. (Fig. 36).

Occurrence:

60°37′ N, 27°52′ W, 1505 m, 4°5. "Ingolf" St. 78: 13-VI-1896. 1 ♂, 8 mm.

Description of ♂. 8 mm (Fig. 36). Body very slender. First segment a trifle shorter than head. Length ratio of body segments: 2 (head + first segment):3:5:7:10:5:1. Head, 1st and 7th segments are smooth. There are no dorsal or lateral spines, but 2nd to 6th segments have small warts or tubercles on dorsal side, 5th and 6th also on ventral side.

Pereiopod 1 rather slender. Pereiopod 2, second joint long and narrow, longer than 6th joint, and without spine-tooth at lower end; hand rather powerful, oval, with palm evenly curved, without teeth or other projections, but defined by a triangular lobe tipped with a rather long and stout spine. Pereiopods 3–4 quite missing, but there are gills on the segments in question. Pereiopod 5 is a small bud-like, 1-articulate process, fixed at the middle of 5th segment and tipped with a seta. Pereiopod 6 is a trifle longer than pereiopod 7, because of the greater length of the first free joint; but these two pairs of pereiopods are quite alike and of the normal, subcheliform shape; 4th and 5th joints have setæ on fore margin, palm has a few short spines. Abdomen very short,

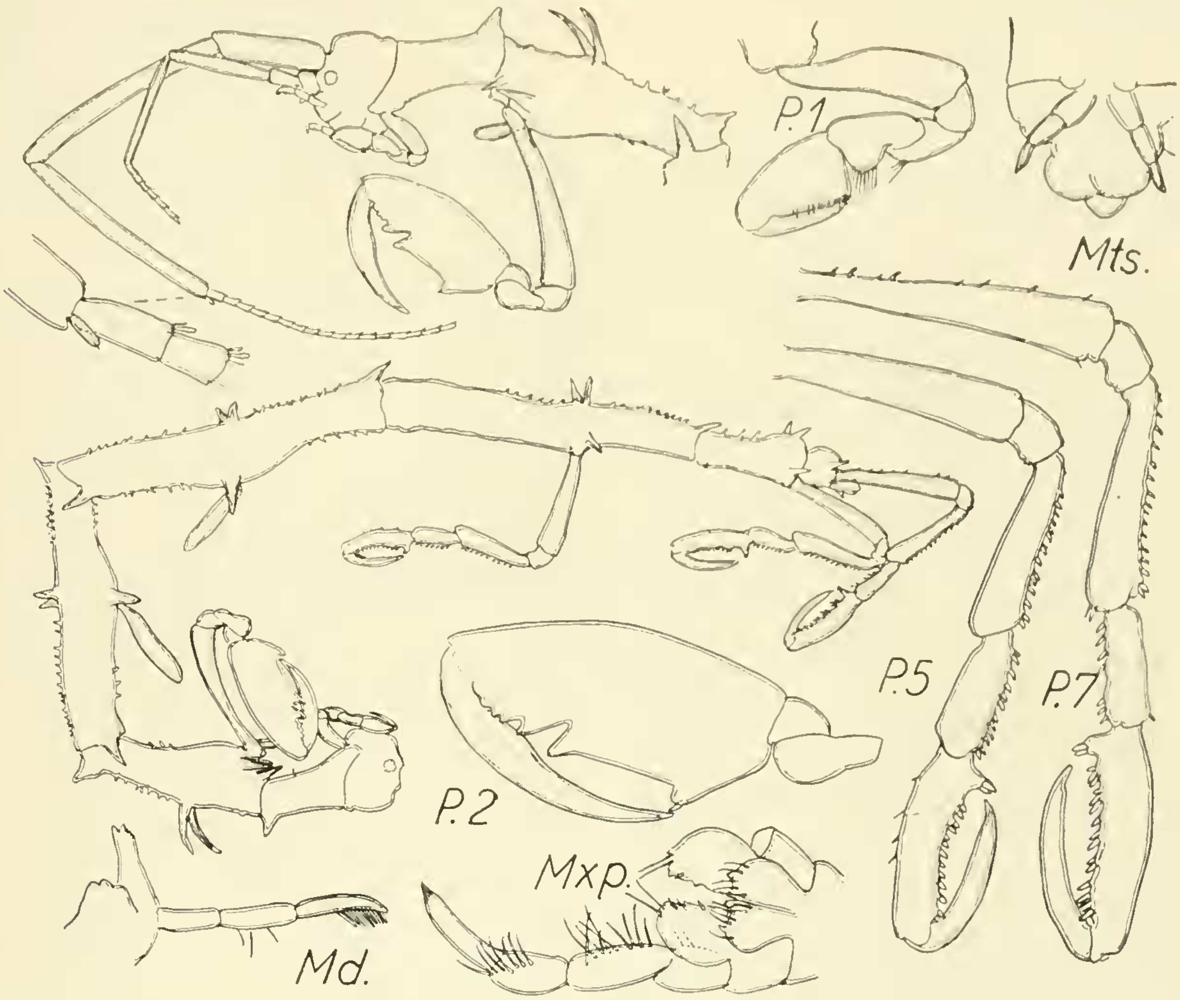

Fig. 35. *Protellina ingolfi* ♂.

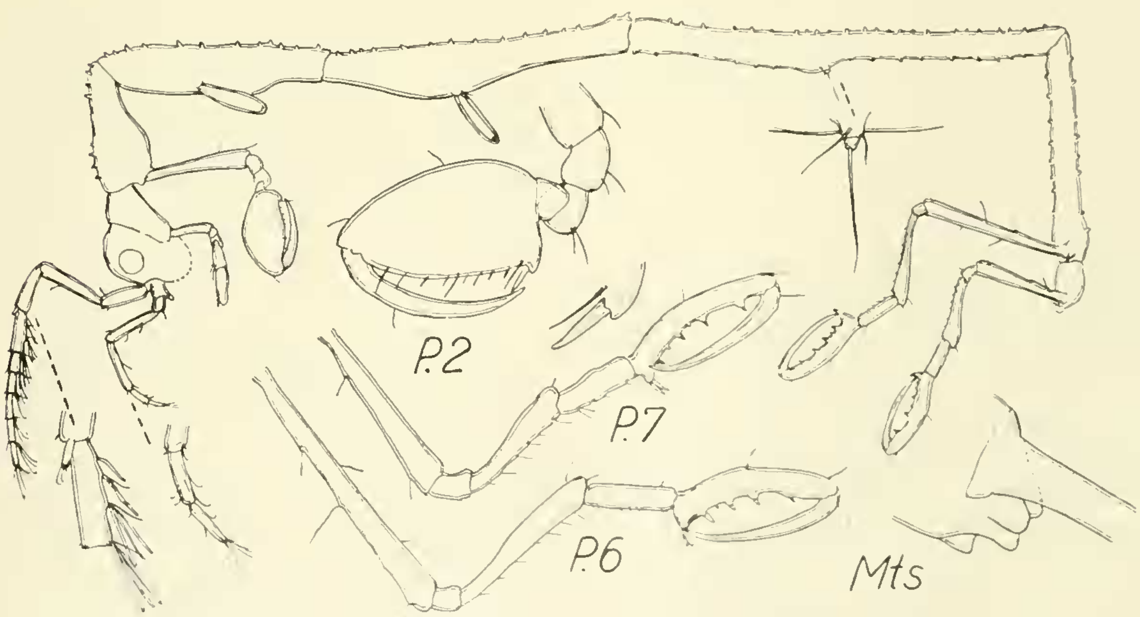

Fig. 36. *Parvipalpina verrucosa* ♂.

with a single medio-dorsal lobe and a pair of ventro-lateral lobes as in several other genera, but without limbs.

♀ unknown.

Genus: **Thorina** n. gen.

Pereiopods 3–4 missing, the other pairs normal. Two pairs of gills (on third and fourth segments). Antenna 1, no accessory flagellum. Antenna 2, flagellum 2-articulate. Mandible with molar process and 3-articulate palp; palp of maxilla 2 has two joints. ♀ has two pairs of short, bud-like, 1-articulate appendages on abdomen (♂ unknown). Of the two pairs of marsupial plates the first pair is ciliated both on fore and hind margin, the second pair only at the lower corner.

Genotype: *Thorina spinosa* n. gen. n. sp.

358. **Thorina spinosa** n. sp. (Fig. 37).

Occurrence:

61°15′ N, 9°35′ W, 900 m. "Thor" St. 99: 22-V-1904. 7 ♀ 8–10 mm (5 ♀ juv. 8–9 mm, 1 ovig. ♀ 10 mm, and 1 ♀ with large but empty marsupium 10 mm).

Description of ovigerous ♀, 10 mm (Fig. 37). Body rather slender. First segment very short, not longer than head, and in length only about one third of segment 2. Segments 3–4 subequal in length, but longer than second segment; 5th segment a trifle longer than 4th; 6th and 7th segments short. Head and first segment are dorsally smooth; 2nd and 4th to 6th segments have two dorsal spines each, 3rd segment has 3, and 7th segment is dorsally smooth; all the dorsal spines are unpaired. Third and 5th segments have a pair of ventro-lateral spines near fore end, and there is a short spine above base of all pereiopods (except first pair) and gills; besides there is a pair of rather short ventro-lateral spines in front of base of pereiopod 6.

Eyes could not be traced. Antenna 1 a trifle longer than head + 3 first segments; second joint the longest, third joint a trifle longer than first; flagellum about as long as peduncle, 16-articulate; no accessory flagellum. Antenna 2 as long as peduncle of antenna 1, rather narrow: flagellum short, 2-articulate.

Pereiopod 1 about as in *Protellina ingolfi* (fig. 35), but the hand is somewhat narrower. Pereiopod 2, second and third joints each terminate in a spine-like process on fore-margin; hand very powerful, oval, with upper edge boldly curved and terminating in front in a small conical projection; palm evenly curved, defined by a triangular lobe tipped with a small spine, and with two small teeth near finger hinge; dactylus very strong, a trifle shorter than palm. Pereiopods 5–7 are slightly increasing in length from no. 5 to no. 7; pereiopod 5 is much more slender than prp. 6–7, but of a similar shape; on fore margin of 4th–6th joints of these three pairs of legs there are very slender spines, not short heavy spines as in *Protellina ingolfi* (fig. 35). The gills are narrow.

♂ unknown.

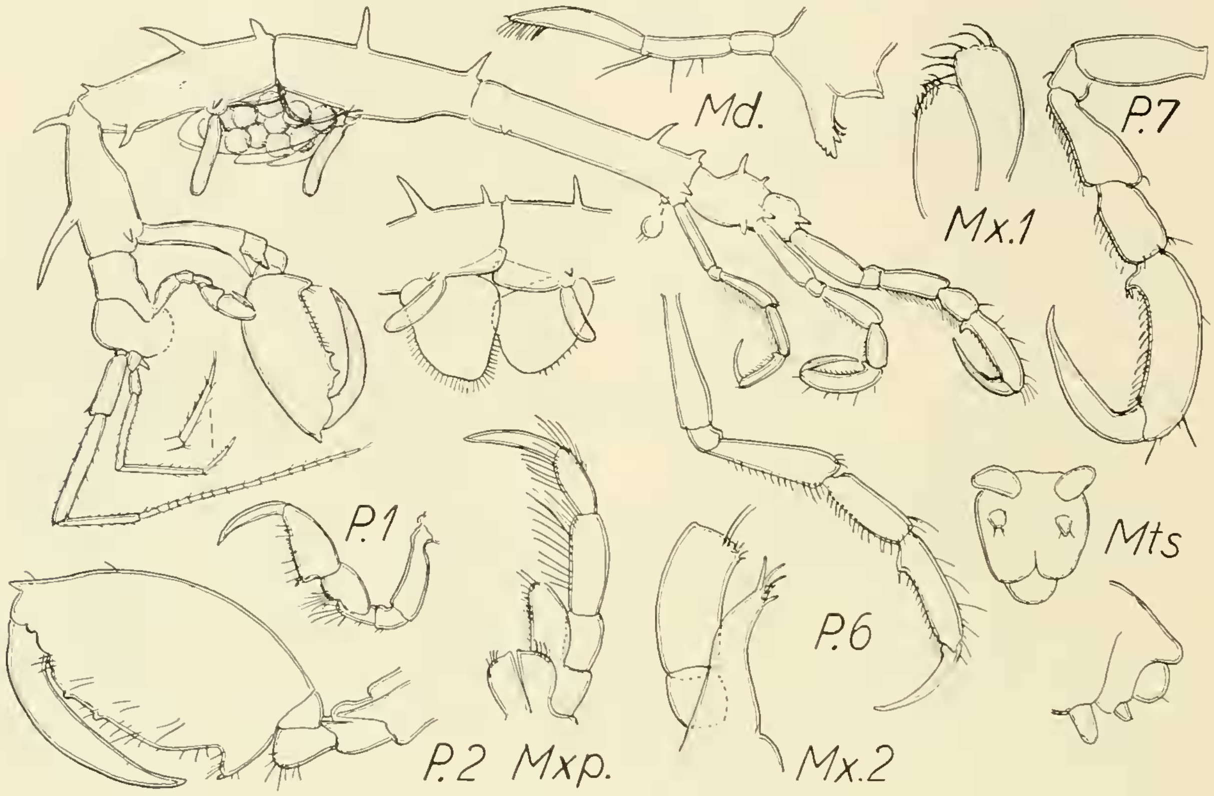

Fig. 37. *Thorina spinosa* ♀ ovig.

Genus: **Æginella** Boeck.

359. **Æginella spinosa** Boeck (Chart IX).

Æginella spinosa G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 653, pl. 235 fig. 1.

Occurrence:

63°04′ N, 9°22′ W, 493 m, 5°2. "Ingolf" St. 2: 12-V-1895.
64°07′ N, 11°12′ W, 446 m, 2°5. "Ingolf" St. 4: 13-V-1895.
64°54′ N, 55°10′ W, 740 m, 3°8. "Ingolf" St. 27: 1-VII-1895.
65°16′ N, 55°05′ W, 682 m, 3°6. "Ingolf" St. 35: 18-VII-1895.
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895.
62°49′ N, 7°12′ W, 520 m, 1°6. "Ingolf" St. 144: 11-VIII-1896.
68°28′ N, 54°47′ W, 450–350 m. "Tjalfe" St. 199: 18-VIII-1908.
68°08′ N, 57°30′ W, 398 m. "Dana" St. 2361: 26-VI-1925, Ad. S. Jensen leg.
62°30′ N, 1°56′ E, 525 m, 4°9. "Michael Sars" 29-VII-1902. Ad. S. Jensen leg.

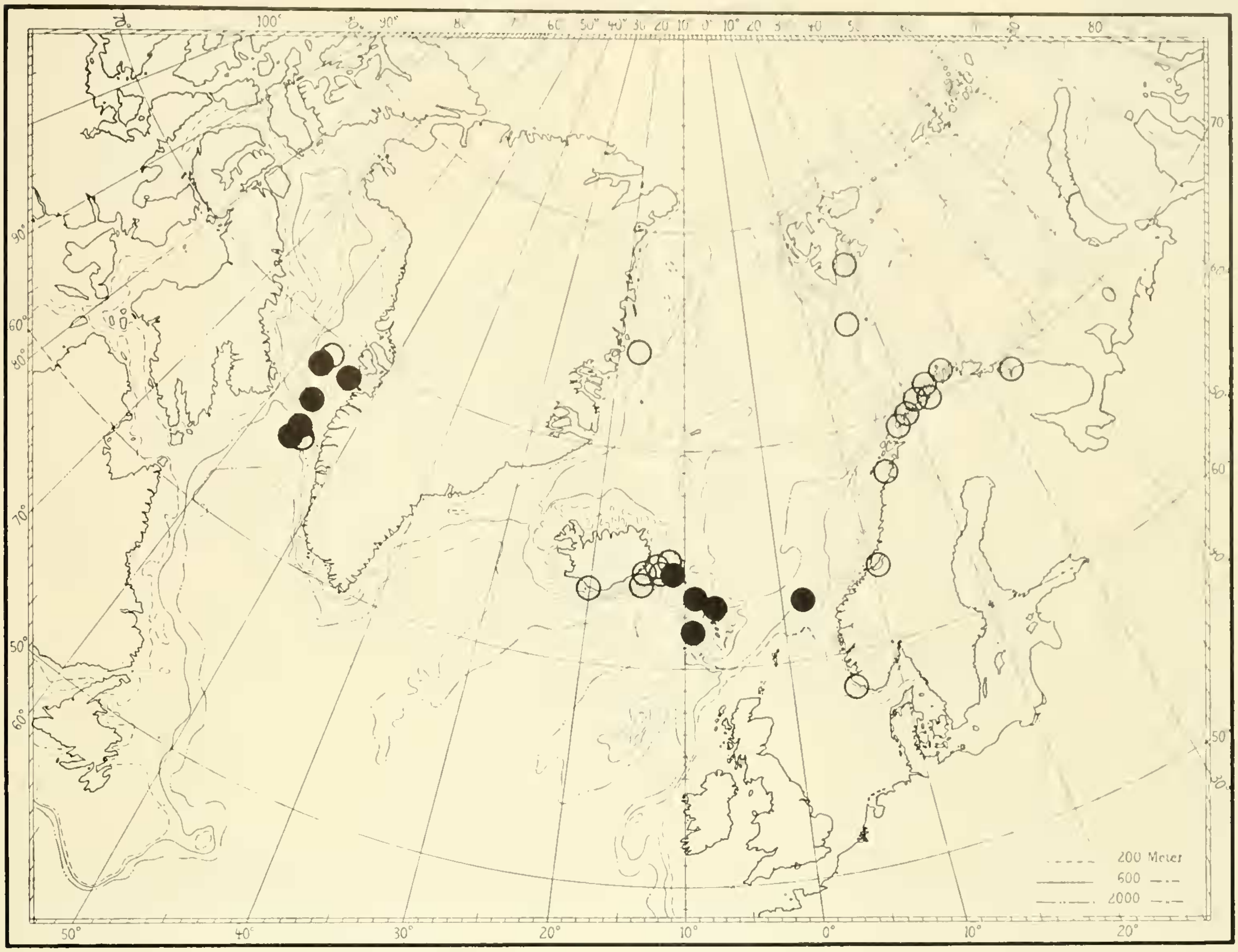

Chart IX. Distribution of *Æginella spinosa*. ● = new localities, ○ = localities from the literature.

66°49′ N, 56°28′ W, 435 m, 4°4, sand, mud. WANDEL 1889.
Only 1 or 2 specimens were taken at a time.

Distribution (Chart IX). West and East Greenland; East and South Iceland; from South East Spitsbergen and Murman Coast along Norway to Haugesund; depths usually (15)100–400 m. For special localities see K. STEPHENSEN, Tromso Mus. Skr., vol. 3, 1935–42, p. 429, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 69.

Genus: Æginina Norman.

360. **Æginina longicornis** (Krøyer) (Chart X).

Ægina echinata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 651, pl. 234 fig. 2.
Æginina longicornis Shoemaker, Contrib. Canad. Biol. and Fish., vol. 5, 1930, p. 352 (134), lit.

Occurrence:
63°35′ N, 10°24′ W, 512 m, 0°5. "Ingolf" St. 3: 12-V-1895.
64°07′ N, 11°12′ W, 446 m. 2°5. "Ingolf" St. 4: 13-V-1895.
66°18′ N, 25°59′ W, 621 m, ÷ 0°75. "Ingolf" St. 15: 14-VI-1895.
63°06′ N, 56°00′ W, 2258 m. 2°4. "Ingolf" St. 24: 25-VI-1895.
1 small specimen on *Thujaria*; determination not certain.
69°46′ N. 51°22′ W, 475 m. "Tjalfe" 27-VII-1908.
68°28′ N. 54°47′ W, 450–350 m. "Tjalfe" St. 199: 18-VIII-1908.
68°08′ N, 57°30′ W, 398 m. "Dana" St. 2361: 26-VI-1925. AD. S. JENSEN leg.

Usually only one or a few specimens were taken at a time. The length is up to about 36 mm (♂).

Distribution (Chart X). Widely distributed, especially in the arctic area, mainly littoral–sublittoral. For special localities see STAPPERS, in Duc d'Orléans, Camp. Arctique, Crust. Malac., 1911, p. 74, SHOEMAKER l. c. 1930, p. 352 (134), and K. STEPHENSEN, Tromso Mus. Skr., vol. 3. 1935–42, p. 430, and Zool. of Iceland, vol. 3, no. 26, 1940, p. 69.

Genus: **Proæginina** K. Stephensen.

Proaginina K. Stephensen. Zool. of Iceland, vol. 3. no. 26, 1940, p. 70.

Genotype: *Proaginina norvegica* = *Parvipalpus norvegicus* K. Stephensen 1931.

361. **Proæginina norvegica** (K. Stephensen).

Parvipalpus norvegicus K. Stephensen. K. Norske Vid. Selsk. Skr., 1931, no. 5. Trondhjem, figs.
Proaginina norvegica K. Stephensen, l. c. 1940. p. 70, figs.

Proæginina norvegica K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 433, figs.

Occurrence:
63°06′ N, 56°00′ W, 2258 m, 2°4. "Ingolf" St. 24: 24-VI-1895. $^1/_2$ specimen + 1 ♀.
61°50′ N, 56°21′ W, 2702 m, 1°5. "Ingolf" St. 36: 28-VII-1895. 1 ♂(?), 1 ♀.

Remarks. The ♂(?) is 8 mm, the two ♀ have large marsupium and are 9–10 mm in length. These specimens are much smaller than the specimens hitherto described (which were 19–32 mm) 5th segment is only twice the length of segment 2; pereiopods 5–7 are lost, but one pereiopod 6 is preserved in the ♂.

Distribution. North Norway c. 70°40′ N, 200–350 m, rocky bottom (type-locality; K. Stephensen 1931). South of Iceland 63°21′ N, 16°22′ W, 500–560 m (K. Stephensen 1940).

Genus: Caprella Lamarck.

362. Caprella microtuberculata G. O. Sars.

Caprella microtuberculata G. O. Sars, Norske Nordhavs-Exp., Crust., vol. 1, 1885, p. 222, pl. 18 fig. 3.
Caprella microtuberculata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 664, pl. 239 fig. 1.
Caprella microtuberculata K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 436 (lit.).

Occurrence:
63°04′ N, 9°22′ W, 493 m, 5°2. "Ingolf" St. 2: 12-V-1895. 4 specimens.
63°35′ N, 10°24′ W, 512 m, 0°5, Hydroids. "Ingolf" St. 3: 12-V-1895. Numerous specimens.
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895. 1 specimen.

The length is up to about 20 mm.

Distribution. East Greenland 66°–72° N, 40–200 m (K. Stephensen, Meddel. om Gronl. vol. 121, no. 14, going into the press). From North Norway (Hammerfest) to Spitsbergen, Franz Joseph Land and Siberia 147° E, from the shore down to 329 m; for special localities see K. Stephensen, l. c.

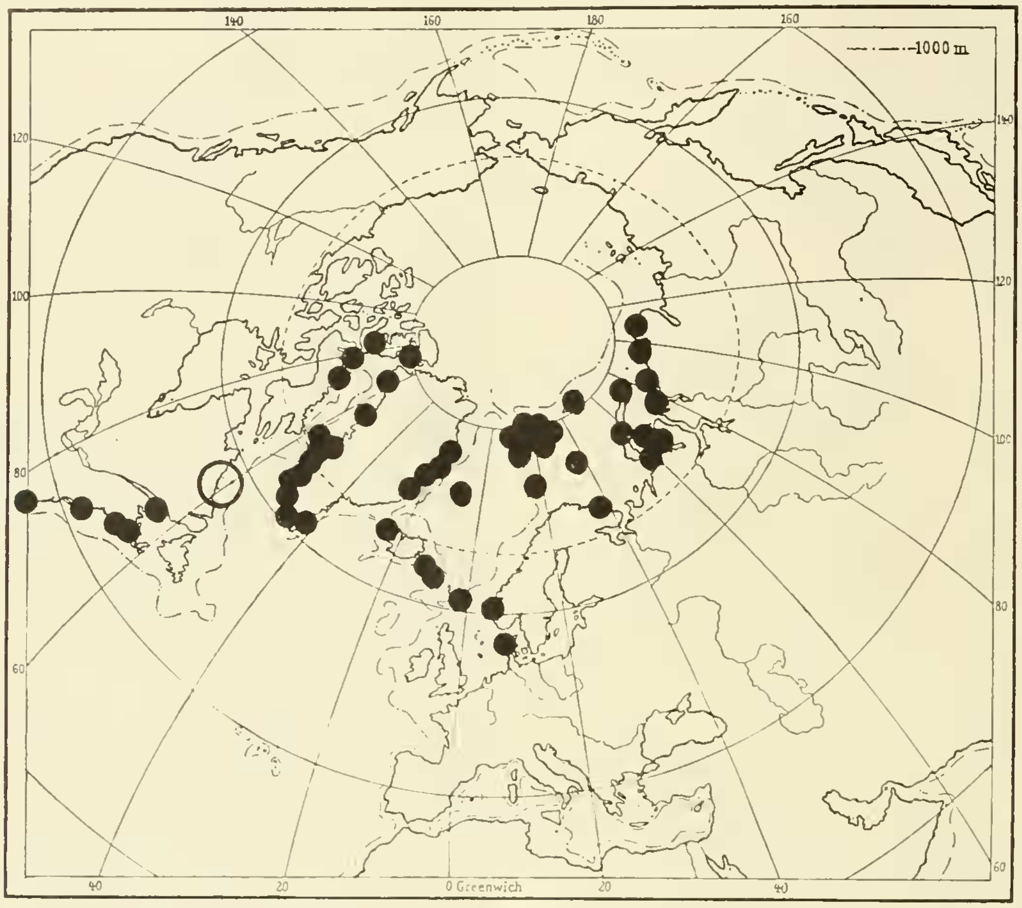

Chart X. Distribution of *Æginina longicornis*. The ring indicates a locality which could not be noted exactly.

363. Caprella punctata Boeck.

Caprella punctata G. O. Sars, Crust. of Norway, vol. 1, 1895, p. 660, pl. 237 fig. 2.

Occurrence:
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895. 2 ♀ with large, but empty marsupium 10–12 mm, 1 ♀ with very small marsupial plates.

These specimens agree fairly well with G. O. Sars l. c.

Distribution. From North Sea (Agger in West Jutland) along Norway to Spitsbergen and Novaja Zemlya; possibly also the Faroes. For special localities see K. Stephensen, Tromso Mus. Skr., vol. 3, 1935–42, p. 442. A revision has shown that specimens from East Iceland, 397 m, recorded with ? in K. Stephensen, Zool. of Iceland, vol. 3, no. 26, 1940, p. 74, no doubt belong to this species.

364. **Caprella horrida** G. O. Sars.

Caprella spinosissima G. O. Sars, Norske Nordhavs-Exp., Crust., vol. I, 1885, p. 225, pl. 18 fig. 4.
Caprella horrida K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935-42, p. 438 (with lit.).

Occurrence:
63°04′ N, 9°22′ W, 493 m, 5°2. "Ingolf" St. 2: 12-V-1895. Several specimens (♂, ♀ with marsupium).
63°35′ N, 10°24′ W, 512 m, 0°5. "Ingolf" St. 3: 12-V-1895. Numerous specimens (♂, ♀ with marsupium).
64°07′ N, 11°12′ W, 446 m, 2°5. "Ingolf" St. 4: 13-V-1895. About 10 specimens (♂, ♀ with marsupium).
66°18′ N, 25°59′ W, 621 m, ÷ 0°75. "Ingolf" St. 15: 4-VI-1895. 2 specimens, determination not certain.
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VII-1895. $2^1/_2$ ♀ with marsupium.
63°26′ N, 7°56′ W, 887 m, ÷ 0°6. "Ingolf" St. 138: 10-VIII-1896. A few specimens (♂, ♀).
62°30′ N, 1°56′ W, 550–600 m, ÷ 0°17. "Michael Sars" 29-VI-1902, Ad. S. Jensen leg., 1 ♂.
62°40′ N, 1°56′ W, 700 m, ÷ 0°3. "Michael Sars" 19-VII-1902, Ad. S. Jensen leg. Several ♂, ♀.
60°19′ N, 5°22′ W, 1200 m, ÷ 0°15. "Michael Sars" 10-VIII-1902, Ad. S. Jensen leg. Numerous ♂, ♀.

The length is up to 25 mm, but the majority, both ♂ and ♀, are smaller: 15–20 mm.

Distribution. The Arctic deep basin with adjacent waters, from Arctic America and East Greenland to Spitsbergen, Siberia and the Faroe Channel. For special localities and references see K. Stephensen, Tromsø Mus. Skr., vol. 3, 1935-42, p. 438, Zool. of Iceland, vol. 3, no. 26, 1940, p. 75, and Meddel. om Grønl., vol. 121, no. 14, just going into the press.

365. **Caprella rinki** K. Stephensen (Fig. 38).

Caprella rinki K. Stephensen, Meddel. om Grønl., vol. 53, 1916, p. 296, figs.

Occurrence:
61°42′ N, 9°36′ W, 1026 m, 4°8. "Ingolf" St. 44: 14-VIII-1895. 4 ♀ with large but empty marsupium up to 9 mm; 3 ♂ up to 10 mm.
65°14′ N, 30°39′ W, 1416 m, 2°4. "Ingolf" St. 95: 27-VI-1896. A few specimens: ♀ with embryos in marsupium up to 10 mm 2 ♂ 10–15 mm.
65°30′ N, 55°26′ W, 550 m, 4°5. Wandel 1889. 1 ♀ juv., c. 9 mm, 1 small specimen.

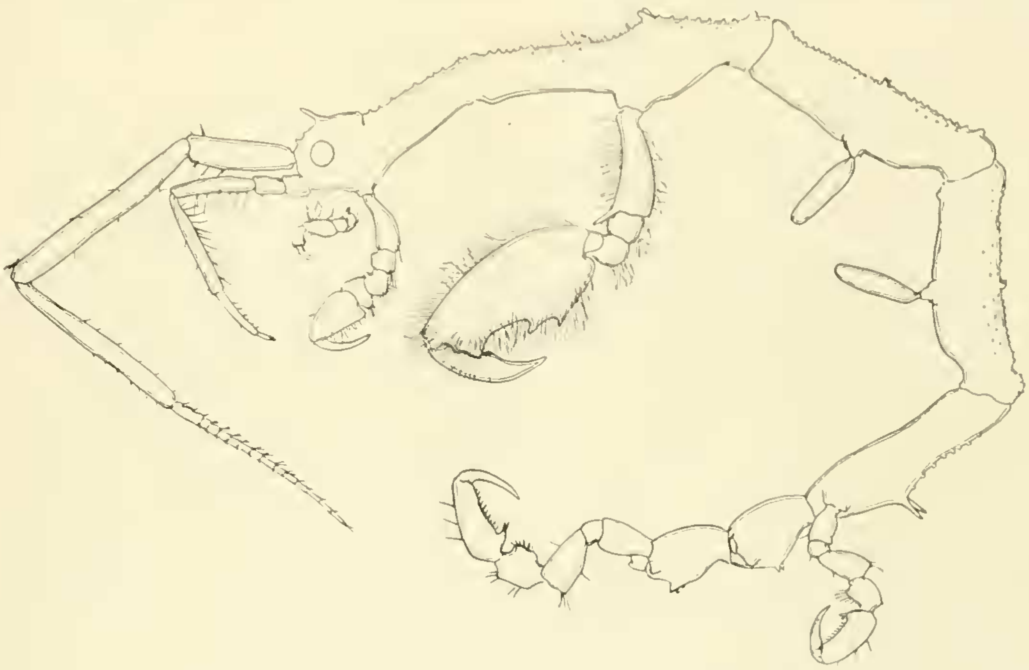

Fig. 38. *Caprella rinki* ♂. St. 95.

Remarks. The ♀ agree on the whole well with the type specimens, but the hand in pereiopod 2 is a trifle narrower; in some cases the paired dorsal teeth are longer, and segments 6–7 are dorsally smooth.

♂ were previously not known. The largest ♂ (15 mm, "Ingolf" St. 95; fig. 38) has the hand of pereiopod 2 much narrower than in ♀ and the palm provided with a large poison fang ("Giftzahn"). Besides the limb is all over covered with delicate ciliae, about as in *C. ciliata* G. O. Sars (G. O. Sars 1895, pl. 239 fig. 2). In this large specimen the paired dorsal teeth on segment 5 are much higher than on the other segments, and the dorsal warts are much fewer than in ♀.

In the smaller ♂ (10 mm) pereiopod 2 is much more scarcely setose than in the large ♂, and in some segments (nos. 2, 3, 4, 6, 7) the paired dorsal teeth are in one of the small ♂ quite missing.

Distribution. Mouth of Bredefjord, South West Greenland, 460–550 m (type-locality; K. Stephensen l. c.).

THE INGOLF-EXPEDITION

1895—1896

THE LOCALITIES, DEPTHS, AND BOTTOMTEMPERATURES OF THE STATIONS

Station Nr.	Date	Lat. N.	Long W.	Depth in m	Bottom-temp.	Station Nr.	Date	Lat. N.	Long W.	Depth in m	Bottom-temp.	Station Nr.	Date	Lat. N.	Long W.	Depth in m	Bottom-temp.
	1895												1896				
1	11 - V	62° 30′	8° 21′	249	7°2	24	25 - VI	63° 06′	56° 00′	2258	2°4	45	11 - V	61° 32′	9° 43′	1211	4°17
2	12 -	63° 04′	9° 22′	493	5°3	25	26 -	63° 30′	54° 25′	1096	3°3	46	- -	61° 32′	11° 36′	1356	2°40
3	- -	63° 35′	10° 24′	512	0°5			63° 51′	53° 03′	256		47	12 -	61° 32′	13° 40′	1789	3°23
4	13 -	64° 07′	11° 12′	446	2°5	26	- -	63° 57′	52° 41′	64	0°6	48	- -	61° 32′	15° 11′	2165	3°17
5	- -	64° 40′	12° 09′	292				64° 37′	54° 24′	205		49	13 -	62° 07′	15° 07′	2109	2°91
6	16 -	63° 43′	14° 34′	170	7°0	27	1 - VII	64° 54′	55° 10′	740	3°8	50	- -	62° 43′	15° 07′	1921	3°13
7	17 -	63° 13′	15° 41′	1130	4°5	28	- -	65° 14′	55° 42′	791	3°5	51	15 -	64° 15′	14° 22′	128	7°32
8	19 -	63° 56′	24° 40′	256	6°0	29	5 -	65° 34′	54° 31′	128	0°2	52	- -	63° 57′	13° 32′	791	7°87
9	20 -	64° 18′	27° 00′	555	5°8	30	10 -	66° 50′	54° 28′	41	1°05	53	16 -	63° 15′	15° 07′	1497	3°08
10	- -	64° 24′	28° 50′	1484	3°5	31	11 -	66° 35′	55° 54′	166	1°6	54	18 -	63° 08′	15° 40′	1301	3°9
11	21 -	64° 34′	31° 12′	2448	1°6	32	11 -	66° 35′	56° 38′	599	3°9	55	19 -	63° 33′	15° 02′	595	5°9
12	22 -	64° 38′	32° 37′	1958	0°3	33	12 -	67° 57′	55° 30′	66	0°8	56	- -	64° 00′	15° 09′	128	7°57
13	- -	64° 47′	34° 33′	1171	3°0	34	18 -	65° 17′	54° 17′	104		57	20 -	63° 37′	13° 02′	659	3°4
14	- -	64° 45′	35° 05′	331	4°4	35	- -	65° 16′	55° 05′	682	3°6	58	- -	64° 25′	12° 09′	397	0°8
15	4-VI	66° 18′	25° 59′	621	-0°75	36	28 -	61° 50′	56° 21′	2702	1°5	59	- -	65° 00′	11° 16′	584	—0°1
16	5 -	65° 43′	26° 58′	471	6°1	37	29 -	60° 17′	54° 05′	3229	1°4	60	21 -	65° 09′	12° 27′	234	0°9
17	16 -	62° 49′	26° 55′	1403	3°4	38	30 -	59° 12′	51° 05′	3521	1°3	61	- -	65° 03′	13° 06′	104	0°4
18	17 -	61° 44′	30° 29′	2137	3°0	39	9-VIII	62° 00′	22° 38′	1629	2°9	62	31 -	63° 18′	19° 12′	136	7°92
19	18 -	60° 29′	34° 14′	2949	2°4	40	- -	62° 00′	21° 36′	1591	3°3	63	1 - VI	62° 40′	19° 05′	1506	4°0
20	20 -	58° 20′	40° 48′	3192	1°5	41	12 -	61° 39′	17° 10′	2345	2°0	64	- -	62° 06′	19° 00′	1960	3°1
21	21 -	58° 01′	44° 45′	2505	2°4	42	14 -	61° 41′	10° 17′	1177	0°4	65	2 -	61° 33′	19° 00′	2051	3°0
22	22 -	58° 10′	48° 25′	3474	1°4	43	- -	61° 42′	10° 11′	1215	0°05	66	- -	61° 33′	20° 43′	2124	3°3
23	24 -	60° 43′	56° 00′	Only the Plankton-Net used		44	- -	61° 42′	9° 36′	1026	4°8	67	3 -	61° 30′	22° 30′	1836	3°0

Station Nr.	Date	Lat. N.	Long W.	Depth in m	Bottom-temp.	Station Nr.	Date	Lat. N.	Long W.	Depth in m	Bottom-temp.	Station Nr.	Date	Lat. N	Long W.	Depth in m	Bottom-temp.
68	3 VI	62° 06′	22° 30′	1587	3°4	92	25 - VI	64° 44′	32° 52′	1838	1°4	118	24 - VII	68° 27′	8° 20′	1996	—1°0
69	- -	62° 40′	22° 17′	1109	3°9	93	26 -	64° 24′	35° 14′	1444	1°46	119	25 -	67° 53′	10° 19′	1902	—1°0
70	4 -	63° 09′	22° 05′	252	7°0	94	- -	64° 56′	36° 19′	384	4°1	120	- -	67° 29′	11° 32′	1666	—1°0
71	- -	63° 46′	22° 03′	87				65° 31′	30° 45′	401		121	- -	66° 59′	13° 11′	996	—0°7
72	8 -	63° 12′	23° 04′	371	6°7	95	27 -	65° 14′	30° 39′	1416	2°1	122	26 -	66° 42′	14° 44′	217	1°8
73	- -	62° 58′	23° 28′	915	5°5	96	28 -	65° 24′	29° 00′	1384	1°2	123	28 -	66° 52′	15° 40′	273	2°0
74	9 -	62° 17′	24° 36′	1309	4°2	97	- -	65° 28′	27° 39′	847	5°5	124	- -	67° 40′	15° 40′	932	—0°6
		61° 57′	25° 35′	1433		98	- -	65° 38′	26° 27′	260	5°9	125	29 -	68° 08′	16° 02′	1373	—0°8
		61° 28′	25° 06′	1561		99	7 - VII	66° 13′	25° 53′	352	6°1	126	- -	67° 19′	15° 52′	552	—0°5
75	11 -	61° 28′	26° 25′	1469	4°3	100	9 -	66° 23′	14° 02′	111	0°4	127	2-VIII	66° 33′	20° 05′	83	5°6
76	12 -	60° 50′	26° 50′	1518	4°1	101	10 -	66° 23′	12° 05′	1011	0°7	128	- -	66° 50′	20° 02′	365	0°6
77	- -	60° 10′	26° 59′	1791	3°6	102	- -	66° 23′	10° 26′	1412	—0°9	129	3 -	66° 35′	23° 47′	220	6°5
78	13 -	60° 37′	27° 52′	1505	4°5	103	- -	66° 23′	8° 52′	1090	—0°6	130	8 -	63° 00′	20° 40′	636	6°55
79	- -	60° 52′	28° 58′	1230	4°4	104	11 -	66° 23′	7° 25′	1802	—1°1	131	- -	63° 00′	19° 09′	1314	4°7
80	- -	61° 02′	29° 32′	1761	4°0	105	- -	65° 34′	7° 31′	1435	—0°8	132	- -	63° 00′	17° 04′	1407	4°6
81	14 -	61° 44′	27° 00′	913	6°1	106	12 -	65° 34′	8° 54′	842	—0°6	133	9 -	63° 14′	11° 24′	433	2°2
82	- -	61° 55′	27° 28′	1552	4°1			65° 29′	8° 40′	878		134	- -	62° 34′	10° 26′	563	4°1
83	- -	62° 25′	28° 30′	1717	3°5	107	- -	65° 33′	10° 28′	926	—0°3	135	10 -	62° 48′	9° 48′	508	0°4
		62° 36′	26° 01′	889		108	13 -	65° 30′	12° 00′	183	1°1	136	- -	63° 01′	9° 11′	482	4°8
		62° 36′	25° 30′	755		109	18 -	65° 29′	13° 25′	72	1°5	137	- -	63° 14′	8° 31′	559	—0°6
84	17 -	62° 58′	25° 24′	1192	4°8	110	19 -	66° 44′	11° 33′	1471	0°8	138	- -	63° 26′	7° 56′	887	—0°6
85	- -	63° 21′	25° 21′	320		111	20 -	67° 14′	8° 48′	1619	—0°9	139	- -	63° 36′	7° 30′	1322	—0°6
86	23 -	65° 03′6	23° 47′6	143		112	- -	67° 57′	6° 44′	2386	—1°1	140	11 -	63° 29′	6° 57′	1469	—0°9
87	- -	65° 02′3	23° 56′2	207		113	21 -	69° 31′	7° 06′	2465	—1°0	141	- -	63° 22′	6° 58′	1279	—0°6
88	- -	64° 58′	24° 25′	143	6°9	114	22 -	70° 36′	7° 29′	1456	—1°0	142	- -	63° 07′	7° 05′	1105	—0°6
89	24 -	64° 45′	27° 20′	584	8°4	115	23 -	70° 50′	8° 29′	162	0°1	143	- -	62° 58′	7° 09′	731	—0°4
90	- -	64° 45′	29° 06′	1070	4°4	116	- -	70° 05′	8° 26′	699	—0°4	144	- -	62° 49′	7° 12′	520	1°6
91	25 -	64° 44′	31° 00′	2328	3°1	117	24 -	69° 13′	8° 23′	1889	—1°0						

BIANCO LUNO A/S. KBHVN